ENVIRONMENTAL PLANNING AND DECISION-MAKING FOR LARGE-SCALE POWER PROJECTS

by

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ABSTRACT

This study focuses on the institutional problems involved in planning for large-scale energy and resource projects in B.C. Fundamental to planning for these projects is the resolution of the tension between economic growth and environmental quality. Concern is expressed that, to date, planning has stressed economic values at the expense of environmental values held in society. A more equitable planning structure is needed whereby interested groups in society may present informed views to the planners and decision-makers to help them achieve solutions that more nearly represent the public interest.

To reach a solution that reflects the public interest an advocacy approach to planning is suggested in Chapter Two. This approach stresses interest group participation in the "planning process" to conduct planning that meets public expectations. In order that environmental interests are incorporated into the planning and decision-making for major power and resource projects, an environmental review agency is proposed. This agency would have the power to conduct its own investigations into issues that might affect the environment and advocate its findings in the debate over the proposed projects.

To test the suitability in British Columbia of the advocacy approach a number of criteria are developed. The criteria reflect
some basic democratic values held in our society and the problems associated with institutional design. The criteria include public participation and representation, information generation, efficiency, equality, professional humility, natural justice, liberty and political leadership.

The characteristics of B.C.'s political milieu are examined in Chapter Three to see what problems the implementation of the advocacy approach for environmental and resource planning might face in the province. Three characteristics of the political milieu are seen as possible constraints on the effective implementation of a review agency - materialist values held in the province, lack of strong interest groups and the dependence on resource extraction for economic prosperity.

A case study of the planning and decision-making for the Bennett Dam on the Peace River, presented in Chapter Four, outlines the inadequacy of the planning process. Even though there have been some changes in planning procedures since the initial planning for the Peace project, two principal deficiencies remain - there is virtually no scope for public involvement in the planning process and the information produced is too highly technical to make for effective public participation. As a consequence major energy and resource planning will likely produce results that favour energy and development interests,
The final chapter concludes that the creation of an environmental review agency would help redress the development bias and thus permit compromise solutions that more nearly approximate the public interest. Three other recommendations are also suggested – develop a more explicit advocacy relationship between interest groups in society and government departments, provide for more public participation under the provisions of the Water Act and demand greater federal involvement in projects of national significance.
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CHAPTER ONE
INTRODUCTION

INTRODUCTORY REMARK

The following thesis attempts to outline the role planning, as a discipline, can perform in the decision-making for large-scale energy resource projects in British Columbia. The focus of the study is not on planning techniques useful for decision but rather on the institutional setting in which the techniques are utilized. It is hoped that this focus will help serve as an impetus to institutional reform so that planning tools can be used to their best advantage in promoting environmental quality. The thesis, therefore, emphasizes the decision-making aspects of planning theory, the factors within the British Columbia political milieu that will affect this theory, and finally the actual performance of the existing planning and decision-making structures for resource projects compared with normative criteria of how the structure for resource projects should perform.

PROBLEMS

Controversy surrounding the planning and construction of large-scale power installations is tied to the "environmental crisis" and "energy crisis". The environmental crisis is seen as the failure to understand the lesson of biology, that is, quality controls quantity (Mumford 1967). Man's proliferation and his gluttenous materialist
appetites, which must be fed by some form of energy production, are regarded as destructive to the global environment and ultimately destructive to man himself. The energy crisis has a more prosaic perspective - the inability to maintain cheap sources of power arising from political, technological and economic difficulties, and the limited factors in efforts to promote continued economic growth (RFF 1971).

Retreating from this "crisis" hyperbole to a level of analysis more applicable to specific Canadian, and in particular British Columbia problems, controversy over large-scale power installations has two fundamental dimensions. First, it entails a basic tension between the values of economic growth and environmental quality. Second, the present patchwork government organization for planning and decision-making is ill equipped to provide satisfactory solutions that help resolve this tension.

Tension in Values

In Canada, as in other Western countries, the ethic of economic growth and development has been deeply engrained in our collective consciousness. One result of the success of this ethic has been the increase in the rate of electrical consumption by up to 10% a year. Consumption of electricity per capita in British Columbia is second only to Norway (B.C. Energy Board 1971). With the demand for power doubling every ten years, governments and resource planners have placed a high priority on finding new reserves of energy and developing new power installations. In Canada hydro power has
been the principal concern, as the label "hydro-electric" attached to the names of many Canadian power utilities indicates. In British Columbia hydro power accounts for 89.1% of the total electrical energy generation compared to 77.8% in the rest of Canada and 17% in the United States (DBS 1971; FPC 1970).

To meet the exponential increase in demand for electricity, governments have looked to more and larger installations. In British Columbia controversy has surrounded some of the larger schemes, in particular the Peace and Columbia River projects. Concern has focused on the ability of the province to finance the massive undertakings and, on a more technical level, whether the proposed projects were the best alternatives to satisfy future power requirements. These issues, especially the latter, are still central to the debate over construction of energy production facilities.

In recent years public concern for environmental quality has become an issue. Thermal generating units are criticized for polluting the air, land and water. Hydro schemes, on the other hand, are non-polluting but the destruction of valued wilderness areas and the disastrous environmental consequences arising from projects like the Aswan Dam in Egypt have made these projects subject to attack by those groups that place a high value on environmental quality.

The example of the Aswan Dam is cause enough to demand intensive environmental impact assessments of proposed projects. That project is responsible for the decline in the Eastern Mediterranean sardine fishery resulting from the loss of nutrient-rich Nile River
silt; chemical fertilizers are now needed in agriculture to replace the silt's natural enrichment; the clear river water is undermining the dykes and bridges downstream of the dam; the extensive network of irrigation canals without the flushing action of the annual floods is extending the habitat of the Schistosomia carrying snails that spread the debilitating disease bilharzia; and the reservoir, located in a porous sandstone area and subject to heavy evaporation, is reducing the total amount of water available to the arid country (Sterling 1971). The Aswan Dam is the most dramatic example of myopic project planning but the Egyptian experience with unforeseen environmental consequences has been duplicated throughout developing and developed countries.

If the economic growth of a region is a high priority the defeat of particular projects by determined environmentalists may not provide an acceptable solution, even to the victors. The opposition to the building of dams in the Grand Canyon in the United States in the 1960's which ultimately led to the defeat of the proposals resulted in a disasterous solution for the nearby Four Corners area, bordering Arizona, New Mexico, Utah and Colorado. The rejection of the hydro schemes stimulated the development of a massive complex of coal-thermal generating plants. These plants have caused widespread air pollution over the Mohave desert, an increase in strip mining on the Black Mesa and the lowering of the water table in that area from pumping ground water for the coal slurry pipeline (Rff 1972).
Simplistic problem-solving approaches to complex issues involving basic social values and goals may work to defeat a particular project. The issue will remain to arise in another place or another time if the goals motivating that project are not challenged or accommodated. Hufschmidt (1971) warns, in this context, that

"single-minded concern for a specific goal and its disregard for other important values has been found wanting in the fields of highway construction, urban renewal and energy and mineral resource development. The mistakes of these programs should not be repeated in our zeal to carry out worthy environmental quality programs." (p. 234).

The problem for planning institutions becomes how they are to accommodate these values in a compromise solution that reflects the public interest.

Planning and Decision-Making Institutions

Mistakes in resource planning often arise from failing to see that two or more national objectives are in conflict and the claims derived from these values cannot be resolved at a technical or planning level. For example, the controversy over power plant siting often results from the failure of planners and decision-makers to accommodate demands for economic growth, which entail new power installations, and a newer widespread desire for environmental quality along with economic prosperity. However, the compromises and trade-offs necessary for any decision-making affecting these basic values can only be performed in our liberal-democratic society by the public and their representatives.
The functions of the planning process have a vital role to play in informing the debate between project development and environmental quality. The planners can isolate and develop information on the critical points in the argument. More important, planning can demonstrate that desirable solutions will require trade-offs in values and higher costs. To perform this role planning needs the sophisticated techniques of analysis which are being developed, such as environmental impact analysis, to integrate the recent concerns into decision-making. However, a fundamental obstacle to developing this role is an institutional structure in many jurisdictions that frustrates the representation of the new social values and the planner's techniques of analysis that support these values.

Although planning's concern for developing alternatives and then evaluating them in terms of social goals and objectives offers to the decision-maker needed information, Haskell (1971) comments that it has not been a favoured tool of environmental management. The more immediate concerns of setting standards, issuing permits, providing technical and financial assistance and conducting enforcement proceedings have taken precedence.

Nevertheless, in the field of energy resource development there is in British Columbia as elsewhere considerable planning effort. The Water Resource Service surveys future sources of supply and estimates possible demands; B.C. Hydro and Power Authority conducts their own studies to prepare for future needs; and finally
the B.C. Energy Board is instructed to carry out detailed exam-
inations of what the cabinet thinks is relevant to meeting future
power requirements.

There is planning but it is biased. It only incorporates
one set of values - energy production and economic growth. The
principal environmental protection agency, the Department of
Recreation and Conservation, has only an advisory role. The 1971
Environment and Land Use Act, S.B.C. 1971, C.17, permits public
hearings on resource issues by the committee set up under the Act.
However, the Environment and Land Use Committee does not appear
to have the resources or the political independence to offset the
energy interests. In addition there is good reason to believe
that, despite the cabinet's power to set the terms of reference for
the Energy Board studies and thus incorporate new values into the
planning structure, the new environmental awareness is not ade-
quately represented in the planning for new energy policies, pro-
grames and projects.

Two neighbouring governments of British Columbia, Alberta
and Washington, have taken steps to incorporate the "ecological
imperative" into their government organization to cope better with
environmental issues. Washington's Department of Ecology has res-
ponsibility for investigating environmental quality problems as well
as developing a water resource plan for the State. It has the power
to conduct environmental impact review of actions and activities of
other state and local agencies including dam construction. It also has a Power Plant Site Evaluation Council which is restricted to investigating thermal power plants. The Governor, however, is under no obligation to adopt the Council's findings. In general the Department considers itself an environmental advocate that should represent the environment when its values are threatened. Associated with the Department of Ecology is the Ecology Commission. The Commission acts as a forum where other departments and the public can voice their feelings about the Department's actions or on other issues the Director feels are important. The legislation creating the Commission is not clear as to whether it may veto Department actions (Haskell et al. 1971). The point is that these new agencies are not associated with the traditional conservation agencies and they are set up consciously as a countervailing force to the Department of Natural Resources and other departments that stress development.

Like Washington, Alberta has made an explicit effort to offset the influence of the more traditional departments. In addition to the creation of a Department of the Environment, the government created the Environment Conservation Authority to monitor public opinion and investigate environmental problems. The Department handles those matters pertaining directly to government administration, the activities of civil servants and the integration and implementation of Department programmes. The Environmental Conservation Authority has a more free-lance role. It holds
public hearings on controversial resource and environmental quality issues; it has the power to seek out and investigate other problems that the Authority and/or the Cabinet considers pertinent; and finally, the Authority hears appeals from adjudication carried out by the Department of the Environment.

Other reasons than matching government organization to the broad ecological relationships in nature or creating environmental advocates also motivate institutional reform. Establishing new agencies as symbols of government concern for the environment and increasing organizational efficiency and public accountability are other important considerations that may reflect political values in these institutional reforms.

But in British Columbia there have been few institutional reforms that significantly alter the inputs into decision-making for large power projects. There is no department that can claim the preservation of environmental quality as its jurisdiction. The Environment and Land Use Committee has not the resources to cultivate constituents and thus its advisory power is unlikely to be highly regarded. The Pollution Control Board has jurisdiction over air and water quality but this limited responsibility is further restricted to just issuing pollution permits; it has little power to abate or control pollution. The Department of Recreation and Conservation has an important role in this wilderness province to maintain wildlife values but environmental quality is not limited to preservation of fish and wildlife. The Department of Lands,
Forests and Water Resources adopts the "best use" ethic of resource conservationists but from their perspective the best use of resources is development.

This study assumes that if the structure of government and public interaction remains unchanged, the planning and decisions that result will reflect only the power interests and the growth ethic.

PURPOSE

The purpose of this thesis is to develop an institutional setting that can ensure that environmental values and the public's responses to large-scale projects have the opportunity to be included in the planning and decision-making for these projects.

PERSPECTIVE

From the preceding discussion two propositions are offered in relation to planning and decision-making for large-scale projects in British Columbia:

1. The planning and decision-making structures for major energy decisions are too oriented towards problem solving and physical project development to incorporate the environmental values held within society.

2. An environmental review agency is an appropriate unit of government to ensure that planning and
decision-making for large-scale projects takes into account the environmental perspective.

METHODOLOGICAL CONSIDERATIONS

A Normative Model

Although this thesis advances the suspicion that government behaviour is not in accord with social and political values, to research this suspicion requires a method with which to direct the investigation and to test the findings. That there is a bias against environmental values in decision-making and that some form of review agency can help redress the bias may be stated as working hypotheses. That is, this outlook provides us with something to go on and indicates the first steps for research (Kaplan 1964).

Unfortunately, the working hypothesis offered is not so specific as to provide a framework of analysis. To overcome this obstacle this study develops a normative model of an environmentally-oriented organization structure. Criteria are developed from basic democratic political values and from the precepts of organization theory. The criteria indicate the critical features in the institutional structure that demand attention and the behaviour patterns that should be taken into account if the institutions are to operate according to society's expectations. These criteria in effect become an ideal model. The model is the standard by which empirical structures are evaluated. In addition it points out the direction institutional reform might take. As the criteria outlines those
features of an organizational structure that are important to consider, it can then serve as a framework for analysis of empirical structures.

Chapter Two of this thesis develops the model. The fundamental values that this writer feels are held within society are presented. This chapter discusses the argument that any bureaucracy planning solution to pressing social, environmental and economic problems will be won at the expense of these basic political values. A direction institutional organization might take to avoid this basic conundrum is then offered. Also, other less fundamental problems associated with ensuring desired organizational performance are analyzed to help derive the criteria that should direct environmental organizations.

Applicability of the Model

The criteria are developed within the context of our liberal-democratic government. But within the broad framework of democratic society wide variations in political characteristics occur among different regions. The particular political milieu of a region may affect the character of political and technical activities. Chapter Three discusses the basic political parameters that influence the character of planning and decision-making in British Columbia and examines the applicability of the criteria within the regional context.

A study of the political milieu can only indicate the
broad constraints that influence planning and decision-making. To achieve a fuller understanding of the nature of these activities in British Columbia, Chapter Four considers the experience of the W.A.C. Bennett Dam across the Peace River in Northern British Columbia. A characteristic of hydro-electric projects on major rivers is that they are rarely small-scale operations. The Bennett Dam is larger than most — it is one of the largest earth-fill dams in the world; the Williston Reservoir is more than double the size of the next largest lake in the province; the powerhouse will have an installed continuous generating capacity of 2.3 million kilowatts and by the time the final generators are installed in 1974 it may have cost up to $850 million. Since the political energy and financial resources required to develop the project are so great, an analysis of its development under this pressure should reveal the essential characteristics of the planning and decision-making process for power projects. With the insight gained from this examination, Chapter Five makes some recommendations to improve planning and decision-making in accord with the criteria developed in Chapter Two.

Case Studies

Post-mortem studies of past projects are a legitimate function of social-science research for they help strengthen the feedback process and thus the performance of the management structure (Judy 1969). However, the approach has some shortcomings that must be recognized.
1. **Context:** Each planning operation and decision takes place within a different context and thus one case study does not represent the universe. This is especially true for large-scale projects where the circumstances are always different and there is never any typical case.

2. **Feedback:** Planning and decision-making occur at a point in time and the further from that point, the less applicable are the lessons learned from the project under consideration. The actors learn from past experience and thus alter their subsequent behaviour. For example the somewhat comprehensive approach taken in studying the feasibility of a possible Moran Dam may in part be a reflection of the unforeseen environmental consequences caused by the Bennett Dam.

3. **Hindsight:** Hindsight must be tempered by appreciation of the much more limited perspective of the participants.

Nevertheless this thesis is concerned with diagnosis of the ills of planning not prediction of its behaviour. These ills can be detected in the basic structural relationships within the planning process. An obvious manifestation of changes in these relationships is the introduction of new legislation reorganizing government departments concerned with energy decisions. There have been alterations since the Peace project was initiated but none of these have altered the pattern of intergovernmental and public interaction. Thus the interplay of forces which the Peace project case study reveals should still be applicable today. We
would expect the same types of decision although perhaps more re­
fining by past experience and more defensive in face of changing
public attitudes. If greater precision is desired in predicting
or forecasting the behaviour of the system the significant case
study approach is inappropriate. However, if the purpose of the
study is to understand how the system performs in terms of estab­
lished criteria, the case study approach, with the above mentioned
reservations, is acceptable.

The Planning Function

A problem in studying planning for large-scale energy
projects in British Columbia is that there is little mention of
planning. This situation is highlighted by the scepticism and
slight bewilderment expressed by many of the actors in the de­
cisions when asked about the role of planning. In countries with
a planned economy the planning function is quite easily identified.
There often is a national or regional plan from which energy pol­
icies, programmes and projects are derived. Planning is explicitly
recognized and set forth in a pattern that can be scrutinized. But
in British Columbia the appellative 'planning' is seldom used; when
it is it may refer to minor technical functions of construction
scheduling or reservoir preparation. Planning may indeed be involved
in these activities but at a low level of significance in relation
to the more fundamental problem of how or why the project itself was
conceived. Is it legitimate then to speak of planning for these
projects?
The answer must be yes. Planning performs certain functions that involve goals and the evaluation of alternatives in terms of those goals. These functions may all be organized in one department as many of the minor planning tasks are. This form of organization would simplify the evaluation of planning by concentrating its functions in an identifiable entity. Nevertheless if planning is not organized on this functional basis this situation does not mean there is no planning. The functions of generating information and evaluating and weighing that information in terms of goals and objectives can be performed by a number of agencies. Planning can be analyzed if all the functions that make up the planning process occur within the context of a given decision situation, no matter what the number of participating agencies and groups happen to be.
CHAPTER TWO

PLANNING CRITERIA

SUMMARY

Government institutions are being criticized for not being responsive to basic social values of which environmental quality is a part. Institutions' own goals of survival and the operational techniques of "rationalist" planning to minimize organizational uncertainty are seen by theorists as values that supplant the institutions' prescribed goals of meeting society's expectations and aspirations. A pluralist institutional structure supplemented by an advocacy planning philosophy offers a direction for institutional reform that can perhaps minimize negative institutional behaviour. Values and interests can be reflected by particular organizations that have the resources and expertise to articulate these interests in political decision-making. However, the approach does have some shortcomings with regard to organizational behaviour, systems analysis and environmental politics that frustrate the reflection of environmental interests. These weaknesses can to some extent be compensated for by the creation of a review agency. These considerations lead to a number of criteria that should be satisfied if environmental planning and decision-making are to reflect political values.
INTRODUCTION

Technical analysis of projects is becoming more sophisticated in its attempts to incorporate the significant variables and alternatives for development. The political impact of this planning function and the technician's influence on the political process have received less attention. But the functions of decision-making, policy formation and planning are closely tied together (Freidrich 1971). Hence, if planning techniques are to be examined separately, the role planning plays in decision-making can only be vaguely understood. Thus the techniques the discipline develops to improve decisions may not be effective. The Economic Council (1971) comments, in this regard, that

*What really matters is the approach to thinking about the choices that need to be made - a continuous, conscious and deliberate weighing of alternative actions on the broadest possible basis of knowledge and participation (p. 63).*

To make this statement more than a platitude the institutional arrangements for planning deserve serious consideration to make the planner's efforts relevant and effective in helping accomplish this task.

VALUES

There appear to be two forces at work demanding institutional changes for environmental issues. The first force demands that old institutional arrangements be replaced by new ones that
can effectively deal with the environmental problems we face today. The second force reflects a general dissatisfaction with the whole framework and direction of government activity. Government agencies are being criticized for not being responsive to basic social values (Haskell et al., 1971). Bureaucratic organizations are being attacked for losing sight of the basic values that should sustain and direct their operations.

To accommodate these criticisms of government organizations, considerations for institutional design should include and make explicit the values of society that are applicable to institutional design even though these values are often difficult to make operational. Fox (1971) offers five basic values that he, as does this writer, feels are relevant for institutional design.

**Participation**

A basic value in our society is the right of the individual to participate in making decisions that affect him. The complexity of modern society frustrates the ideal city state or town hall style of participatory democracy. Systems of representation have developed as necessary substitutes for direct participation. Institutions should allow the individual a reasonable opportunity to participate or be represented in decisions that affect him.

**Information**

For an individual to participate in the political process he requires at least a basic understanding of the factors involved
in the decision-making. The ideal of perfect knowledge is difficult to achieve yet information about the alternatives open to individuals remains important. The best practical information that can be provided to determine the course of action an individual considers best in dealing with decisions that affect him should be made available.

Social Efficiency

Social efficiency requires that the costs and benefits to members of society be weighed. Although the problems of measurement and evaluation make an optimum solution impossible, the ideal serves as a model for institutions to maximize benefits to as many people in society as possible.

Liberty

Individuals, in a free society, must have the freedom to determine what trade-offs they can make among different values they wish to pursue. Institutions should then allow individuals to satisfy their preference subject to non-interference with the rights of others.

Rectitude

Institutions should function in accord with the concepts of integrity and equity.

RATIONAL PLANNING ORGANIZATION

Pessimism and fatalism have pervaded much of the theory of bureaucratic organization. The organizational imperative of survival
and the necessity of bureaucracy to deal with the randomness and uncertainty of environmental, economic and social conditions, many theorists feel, minimize the role of any normative social value other than the technician's value of rationality. Planning theories and institutions are intimately involved with this search for rational and comprehensive explanations of pressing social and economic problems to provide a basis for future planning policy and action. Hence planning may be regarded in this perspective as a process to maintain government institutional stability rather than a means to improve social welfare.

The desire and the need to minimize uncertainty in society is the basis of Weber's "law of increasing rationalization" or Parsons' "technological determinism". Progress is equated with the progressive development of rational and specialized techniques and tasks to deal with uncertainty which can be sustained only if the individual gives up his freedom to the large-scale organizations that can utilize these techniques (Wilson 1971). Gouldner (1955) has called this attitude "metaphysical pathos". He wrote that those theories "which promise to make man's own work more intelligible to himself and more amenable to his intelligence are infused with an intangible metaphysical pathos which insinuates in the very midst of new discoveries that all is lost" (p. 496).

H.T. Wilson (1971) points out that these attitudes are predicated on a view of organization that is hierarchical, dependent on status and authority, and requiring an elaborate differentiation
of functions. He expresses the point of view that a new form of organization is emerging that is based on person specialization, not the task specialization needed to increase the efficiency of production of a good or service. The orientation is towards problem solving as opposed to decision-making - an approach applicable to large scale development projects. The need for flexibility rather than formal structure in the rapidly changing world frees the individual from low discretion positions in a hierarchy and facilitates more boundary spanning, inter-academic and profession cooperation.

Though this trend towards "task force problem solving", or in Toffler's term "ad-hocracy", may free the participant from the drudgery of formal organization it might enslave the rest of society in a regime of experts. This problem is especially relevant for planning where there is a tendency to use social science techniques as if they had the precision and predictability of mathematical analysis (Dreyfus 1971). The individual, in this case, loses his freedom to the techniques of the expert whom he is incapable of refuting rather than to the methods of bureaucratic organization, which he is powerless to fight.

The perfect technocratic society Ellul (1964) envisages where human caprice crumbles before the necessity of rational techniques is unlikely to be attained. Institutional structures and rational techniques are not sophisticated enough to gain political control over the myriad of outside and internal variables that influence an organization; they cannot control the variability
of human nature. This situation further complicates the problem of institutional design. Planning organizations that act on what they perceive to be the public interest will in fact be interpreting their own organizational imperatives. What the organization considers to be rational planning will be a reflection of their own members' values and responses to maintaining the organization's stability in a changing political environment.

Planning is closely connected with decision-making. The former is largely technical in character while the latter is political. However, there is no rigid demarcation between the different functions. Rarely can planning be totally objective. The latitude allowed the planner in modifying goals and objectives and setting the range of alternatives to be considered frustrates value-free analysis and can be highly influential in setting the decision-space that limits the range of political debate. Similarly, politicians may exert pressures on the planning process to minimize the possibility that technical analysis may destroy the credibility of pet policies or projects. Thus each element of the planning process has a political and normative facet to it that can influence the planning-decision-making process.

Haefele (1970) comments that when the political element is introduced into the technological milieu we have "the worst of both worlds - technical analysis that is debased by political judgements and political deals in which only a small number and perhaps the wrong
people may play" (p. 7). The technical or planning analysis does not cover the full range of technical possibilities and it is tempered by what experts judge to be political reality. The political process is conducted by the wrong people, that is, technicians, and the process is hidden behind technical findings that purport to be objective.

Muddling the technical process with the political process gives the planner great power but with fallible techniques of analysis, a normative bias, and little political accountability. Thus the individual loses his political freedom to the "rationalist" objectives of ruling organizations. This situation is contrary to basic values in our society regarding the individual's right to influence political decisions that may concern him. To achieve the best of the two worlds of technical analysis and political sensitivity to pressures and interests within society there needs to be a reaffirmation of some basic normative values.

ADVOCACY PLANNING AND PLURALISM

If the "omnipotent planner" approach to meeting social needs and expectations cannot succeed a more fragmented structural framework may be required where the various interests in society can have agencies in the government to advocate their interests. The Ostroms (1971), for example, feel that bureaucratic organization needs to be based on a number of different collectivities capable
of providing public services in response to a diversity of communities of interest.

The pluralist framework relieves an organization of the burden of having to interpret the public interest; it need only represent particular interests. Consequently, if the various interests in society can find government advocates, the discrepancy between bureaucratic goals and public values will be reduced. The organization must remain sensitive to only the interests it advocates if it is to retain its political legitimacy. Nevertheless problems still remain concerning the ability of organizations to reflect public interests. These problems shall be outlined in discussions further on in this chapter.

This pluralist framework is also appropriate for our liberal-democratic society which stresses individual participation, bargaining and consensus on government actions. It provides the forum for the diverse views held within the community and the government resources and expertise to articulate these views.

The advocacy approach to planning requires that planning be viewed as a process in which a number of agencies participate to achieve the final decision on the particular course of action to follow. Fox (1970), for example, sees planning as a process to generate information about the consequences of alternative courses of action in a systematic and authoritative fashion. He lists a number of steps in this process:
1. The ascertainment of different goals relevant to the problem or objectives.

2. The preparation of alternative plans to achieve the objectives.

3. Review by the public.

4. Refinement and adjustment by the planner.

5. The final decision by public officials.

This process attempts to reveal all significant aspects of a problem to facilitate decision-making for the attainment of the objectives so that it can achieve a consensus among those affected by the planning decision. However, just carrying out the process is not enough. At each stage there is room for manipulation and misrepresentation. Davidoff (1965) comments that "values are inescapable elements of any rational decision-making process" (p. 331). Values should be made explicit and subject to public approval or rejection. The process needs to be balanced by a pluralist institutional setting that can ensure that the goals found in society are represented in the alternatives generated by the planners.

To emphasize the social values of liberty, participation and even efficiency, the planning process should not be enclosed within one government department or agency. If each step of the process is carried out properly, the outcomes should meet with wide public acceptance. The decision may not be "right" in an absolute sense; such a question is unimportant. It is in the acceptance of the results that the process is justified.
In the planning process that must consider environmental resources, it is perhaps too much to expect that the forestry service, for example, develop alternative proposals for a forest region at the expense of their forestry interests. Likewise, the B.C. Energy Board, whose function it is to find possible sources of future power, should not be expected to consider more than the economic costs of damaging rare natural environments. The agencies concerned with the environment should take the responsibility as environmental advocates to ensure that these interests are represented in the final compromise outcome. Although the decision may be disastrous the public will, if the process is effective, be forced to accept responsibility.

This view that government planning and decision-making should be so open to public participation and scrutiny is by no means widely accepted. Wisconsin, for instance, took an opposite position in their recent reorganization of government departments concerned with environmental issues. Trade-offs and bargaining on natural resource issues are seen as administrative matters, that only become confused and irrational when "politicized" (Haskell et al 1971). British Columbia takes fundamentally the same position, as Chapter Four will indicate.

ADVOCACY PLANNING FOR ENVIRONMENTAL ISSUES

A Metaphysical Reservation

The pluralist approach is, in western democratic societies, not without its own metaphysical shortcomings since the achievement
of basic social goals may be frustrated. To reach a consensus there is much emphasis on interaction and bargaining among the participants. Fox (1969) writes that the purpose "of the political process is to balance out the differing preferences that people hold so as to arrive at courses of action that serve the overall interest of society" (p. 1368). Reich (1966) has commented that such consensus policy-making tends to support the status quo. No radical initiative can survive the erosion of its principles in bargaining among the participants. Also, Reich comments, it limits the planner's or decision-maker's scope of policy choice and range of facts and issues that he may be willing to explore for he tends to let the participants set the range of issues. Instead of fundamental change the process produces incremental changes (Reich 1966; Lindblom and Braybrooke 1963).

Macpherson (1965), writing on liberal democracy, puts this pluralist process in a materialist perspective. All governments, he writes, are double systems of power. They order relations in society between the government and the individual but also they order relations between citizens. Our democratic system evolved as a consequence of the individualist-liberal economic system of the nineteenth century that demanded the right of every individual to participate equally in those decisions that might affect his economic well-being. The resulting democratic structure, of which pluralist bargaining is such an important component, was designed to facilitate this economic system. The market cannot ensure equitable distribution
of economic wealth, even according to the system's own perfect com-
petition model. Hence the interest groups that the market produces
will have a disproportionate influence in directing that change. This
does not mean that there exists a conscious stratification of power
into groups with economic power and those without, a theory American
pluralists like Polsby (1963) strongly reject. It simply means that
there is a built-in bias in favour of strong economic interests.

Planning For Public Goods With Limited Knowledge

Bross (1965) comments that "when values are converted to
a dollars and cents scale...the conflict of values can be resolved
by a little bookkeeping" (p. 27). As Macpherson points out such
bookkeeping in a private market would result in a balance in favour
of larger economic interests. But many government decisions are
concerned with the expenditures for and effects of public goods and
services as well as private goods.

The distribution of benefits and costs from government
actions and expenditures comes within the realm of welfare economics.
The principles derived from the theories of welfare economics are
directly applicable to the design of planning institutions for large
projects. The Peace project, for example, produced disastrous down-
stream consequences on the biological resources of the Peace-
Athabasca Delta. The elimination of the spring run-off, it is
argued, resulted in the drying up of the unique ecological system
of lakes and rivers (Peace-Athabasca Delta Committee 1970).
Philips and Hetland (1971) attest that the income flows generated from trapping and fishing by local residents were damaged along with the non-quantifiable values of a shattered life-style. As well, they suggest Krutilla’s (1967a) argument that the loss of visitation and option demands by people who might wish to visit the area or at least see that it remains in its natural condition was another cost of the project. The costs from these negative externalities were not included in the price of the project and thus the value of the power received from the project is somewhat lower than the true cost of production. On the other hand, the benefit from reducing the flood threat downstream of the dam is not included in the cost of production.

The effort to reduce the externality of environmental degradation downstream of the dam would be the provision of a public good. If one person was to benefit many would gain and thus no individual could be excluded from the profit whether that person contributed anything or not to the attainment of the good.

Market activity cannot internalize the costs of environmental deterioration. The government must therefore take action to compensate for this failure. Government activity to maintain environmental values or to remedy the "externalities" and "spill-over effects" from the market activities is a public good or service. Public goods are, in theory, only those goods that can be shared equally by all people. However, most of what we call
public goods are shared in different people; not every individual benefits to the same degree. Also public goods, in the sense used here, may bring benefits to select groups or interests in society. In planning, the provision of a public good is essentially an operational objective to meet some goal or satisfy some value.

The government is confronted with severe information problems in trying to assess the values of public goods. Those values that can be provided in the market are relatively simple to derive through deductive and rational techniques. But the value of the public good, where there is no common medium of exchange, is more difficult to analyze.

The evaluation of public goods as well as the attainment of goals and objectives is frustrated by a number of problems:

1. **Goal-Function**: Evaluation is dependent upon some criteria derived from a goal-function. But the formulation of this function is seldom explicit. The goal incorporates a list of tacitly implied conditions which may exclude many straight-forward means to achieve the goal (Rittle 1969). Thus evaluation may be iterative; that is, the results obtained may change the goal-function and thus force a further re-evaluation.

2. **Beneficiaries**: The broad diffusion of benefits makes the identification of the beneficiaries difficult and often those who do gain are unwilling to admit it, to
avoid paying the cost of providing for the benefit.

3. **Utility Functions**: Individuals receive no common satisfaction from the provision of public goods. They each make their own subjective evaluations, and thus they have no common utility functions. Consequently, their utilities cannot be added to form a social welfare function from which the value of the good to society can be derived.

4. **Non-quantifiable Values**: Many values, such as aesthetic qualities, are impossible to define objectively.

5. **Time Period**: Another problem of evaluation is the time period in which the goods are provided (Rittle 1969). Since many of the benefits and costs of environmental management are long range and since their evaluation cannot be predicted beforehand, the estimation of net benefits of environmental expenditures likely will be understated and grossly inaccurate (Stein 1971).

The decision-maker must base his decisions on limited information about their actual consequences. Lindblom and Braybrooke (1963) suggest that this situation, not guided by a high level of understanding and typical of political life, reinforces the incremental decisions of pluralist politics. Disjointed incrementalism produces small changes away from some existing evil towards an unknown destination. Though this form of decision-making responds
to the politics of consensus and bargaining and thus is sensitive
to pressures in society, a technocrat's warning should be noted.

Forrester (1971), a systems analyst, writes that complex
systems often behave in a counter-intuitive manner. He notes three
characteristics of systems of which decision-makers need be aware:

1. Social systems are inherently insensitive
to most policy changes that people select in an
effort to alter the behaviour of the system.
In fact, a social system tends to draw our atten-
tion to the very points at which an attempt to
intervene will fail....

2. Social systems seem to have a few sensitive
influence points through which the behaviour
of the system can be changed. These influence
points are not in the location where most people
expect...the chances are still that a person guided
by intuition and judgement will alter the system
in the wrong direction...

3. There is usually a fundamental conflict
between the short-term and long-term consequences
of policy changes. A policy which produces
improvement in the short-run, within five to
ten years, is usually one which degrades the
system in the long run, beyond ten years....
(pp. 135-136).

Unfortunately trusting planning and political decisions
to the deterministic forecasts of simulation techniques cannot
provide a very satisfactory answer if we wish to work within the
broad political constraints imposed by society. Dyckman (1971)
oberves in this regard that politicians have no desire to be
unnecessarily constrained by numbers produced by such a process,
least of all one which they do not understand and cannot affect.
The need to plan and make decisions without full knowledge of the consequences is aggravated by political expediency that gives politicians a foreshortened time horizon. Decision-makers tend to favour tangible, existing interests to the intangible and uncertain interests of future generations (Stein 1971). Environmental institutional design must concern itself with two basic problems - how to represent the various interests of society in planning and decision-making and how to ensure that competing demands do not encourage decisions destructive to long-run social welfare.

The pluralist approach to interest group participation in planning and decision-making has been suggested above as the approach to ensure group representation. The pluralist political process can be rationalized in institutional design by organizing government units to match the domains of the various public goods and services that the government supplies. This domain should then encompass those specialized groups in society concerned with that good. The public goods would, in a sense, be packaged if the boundaries of the unit of government providing that good could encompass the externalities, thus internalizing them to the public served (Ostrom & Ostrom 1971; Dupre 1969).

But for this pluralist re-organization to be effective, there must be some consideration of the behaviour of individuals, groups and institutions in relation to achieving their own interests.
The Rational Individual

Aristotle wrote "for that which is common to the greatest number has the least care bestowed upon it". Hardin (1968) illustrates how the maximizing, self-interested rational individual in working for his own interest can eventually make himself and his society worse off when dealing with a common or public good.

A herdsman, to maximize his gain, must balance the positive and negative utilities from adding one more animal to his herd. By adding an animal to the common grazing land he is able to achieve the full benefit for himself which gives him a substantial positive utility or profit. The negative utility comes in with the minor deterioration from the overgrazing. But these effects are shared by all the herdsmen and thus to the single herdsman the cost is not great. Hence the herdsman can profit from adding one more animal while the cost involved is shared among all the herdsmen. This cost calculus applies to all the herdsmen though, and so they too add their extra animals to the common which, in the end, seriously damages the grazing land and the welfare of the total group.

Hardin applied this parable to the problem of overpopulation but the lessons are applicable for institutional consideration. It shows the pressures to exploit what is by heritage common to all, the lack of economic motivation to work for an objective in the name of the whole and the need to regulate for the
common welfare. In addition, although not within the strict assumptions of rational economic man, the marginal effects the individual may perceive affecting himself from his own neighbours' activities may blind him to the actions that need to be taken.

**Organized and Unorganized Interests**

If the rational economic man, acting in his own interest to exploit a common or public good and able to perceive the damage, worsens his own as well as the rest of the communities' welfare the answer would seem to be for individuals to organize into groups and work for their collective interest. But Mancur Olson (1965), a theorist on group and individual organizing behaviour, writes that there is little or no incentive for rational economic men who desire the same ends to work for their common group interests. Unless each member can achieve a separate reward commensurate to his individual effort, economic man has no common interest in paying the cost of providing for what is, in effect, a public good. He writes "each would prefer the other pay the entire cost, and ordinarily would get any benefit provided whether he had borne part of the cost or not" (p. 45). Where groups do form, small scale organizations have an advantage over large scale organizations. In small groups at least some members are likely to work for the goal because the gains will be greater than the cost of organizing for those members. They would each receive separable benefits.
Olson sees three factors which hamper effective action by large organizations:

1. The larger the group the less likely any individual will gain enough to bear the burden of providing even a small amount of the cost to achieve that public good.

2. The larger the group the less any single member of the group can benefit from achieving the group's common interest.

3. The larger the group the greater the cost and the higher the critical limits before any collective good is achieved.

The Ostroms (1971), outlining the theories of public choice, point out that Olson's theories can be augmented by Buchannan and Tullock's (1965) ideal of the representative individual. Such an individual organizes to influence public agencies' allocation of public goods and services. The representative individual needs to account for two types of cost.

1. **External costs** or the cost of not obtaining the decision he desires.

2. **Decision-making costs** or those costs incurred in decision-making, such as the expenditure of resources, time, effort and opportunities foregone in decision-making.

External cost would be least where the representative individual could count on full support from his organization so
that he would have support to accept only those decisions he
desired. But to reach unanimity his decision-making costs would
be at their highest. Thus the cost minimizer would settle for
that point where the external and decision-making cost curves
intersect.

But what of the diffuse interest in society? The
decision-making cost of achieving anything like a simple majority
is phenomenal, yet these interests should be part of the deliberative
process.

**Political Leadership**

Within the political system the politician functions to
provide leadership for the various interests in society and also
to provide a focus for political debate. But for the politician
to become aware of and responsive to any interest there needs to be
a great deal of organization brought to bear to ensure a hearing.
As we have seen the costs are often too high for those members of
society with many overlapping interests who have no incentive to
organize.

The individual has the power to vote but that weapon can
only approve of or disapprove of a whole range of past actions,
policies and programmes for which the legislators are responsible.
The vote is much too crude a device to bring pressure to bear on
specific problems.
It is unlikely the diffuse interests held within society can be fully incorporated in the political process. However, the intervention of agencies reflecting the disparate interests of their constituents can create a forum for political debate and thus provide a basis for potential leaders to develop.

**Environmental Politics**

The new environmental interest groups are heirs to the conservation movement earlier in this century. And, like the earlier movement, the present one suffers a similar ambiguity in objectives that cannot be disguised by quoting Thoreau on the frontispieces of project evaluation critiques.

McConnell (1971) suggests that the early conservation movement broke up in the United States when fundamental differences in objectives were revealed over the building of a domestic water storage dam in Yosemite Park. Gifford Pinchot, who was chief spokesman for the conservationists, could find no fault with the dam because the benefits of the project were spread equally within society. His brand of conservation was motivated by an egalitarian desire to stop the waste and despoliation of the wilderness by Robber Baron types in order that the benefits of the common wilderness property might be equally shared within society. John Muir, the founder of the Sierra Club, and his somewhat transcendentalist supporters opposed the project because it represented violation of sacrosanct wilderness.
The Canadian experience has been somewhat less strident than the American. The smaller population has slowed the pace of resource exploitation. The result has been that Canadian conservation minded interest groups have never achieved the power of their American counterparts. Canadian federal and provincial governments have provided the bulk of the support for managing resources to meet long-run needs (Smith & Witty 1970). Thus what conflicts have existed over resource policy have, till recently, been largely internalized within and between government and a few resource developers.

Today, in Canada as in the United States, the cleavage has become wider between those people who are primarily interested in the economic distribution entailed in the development of natural areas and those groups who value the land for itself. Both groups are involved in the political struggles but the former is more directly concerned with fighting within the same framework as the developers, by attacking the techniques and methods upon which the developer justifies his plan. Their concern is in finding a mechanism for an equitable distribution of environmental goods and services in which development of natural areas can be pursued, at a price. They desire to incorporate into project costs the scarcity value of natural phenomena. The assumption appears to be that if the "real" price can be paid the need must be great enough within society to permit development. Their political approach is in the
mainstream of the pluralist tradition for it permits a compromise solution in which there may be advantages and disadvantages for each group.

However, the new environmental vigilantes are not concerned with economic values; they attack the concept of the need for any project (Wandesforde-Smith 1971). The natural environment is the absolute value and economic development is relative. Hence there is no room for bargaining and compromise. If this element becomes significant in the pluralist planning process a pluralist institutional setting may prove ineffective.

Government Institutions

An organization's desire for stability in an unsettled and uncontrolled environment was seen, in an earlier discussion, as a basic reason for government institutions to follow their own values rather than the values society expects them to pursue. The pluralist approach was offered as a structure that can help reduce the gap between expectations and performance by binding an organization's political legitimacy to a specific interest within society. The following discussion outlines some less fundamental advantages and problems of this approach as well as other general observations on government institutional behaviour.

1. Political Representation: An agency must have a political basis of support with which it can bargain with other
agencies to further its own goals and also to maintain or expand its area of operation. The pluralist bureaucracy does not attempt to frustrate these liaisons but furthers them by making the agencies recognized advocates for the interests they serve.

The problems of interest group organization outlined earlier may hinder the representation of all substantial interests in the pluralist bureaucracy. A majority of the population with a moderate interest in an outcome do not have the same incentive to make government agencies aware of their feelings as do smaller groups with a large interest in the outcome.

Related to this point is the problem of scale. How finely or broadly should a public good be defined? From the discussion on environmental politics, two distinct interest groups were noted - those who are concerned with the biased distribution of our natural wealth in favour of economic interests and those who have an absolute uncompromising interest in preserving the wilderness. How should environmental planning organizations represent the spectrum of views that lie between these extremes?

Unfortunately, these unresolved problems will likely force trade-offs in the design of an actual structure. The conflict between the pluralist concept that entails a multitude of interests and the limited ability of governments to provide resources to seek out diffuse interests in society can work to frustrate the representation of society's diverse interests in decision-making. Hopefully
though, the structure can incorporate the significant interests in society, that is those interests that feel some concern for the outcome.

2. **Domain Consensus**: The alignment of the boundaries of public goods with the jurisdiction of public agencies makes explicit the domain of each agency; it gives to each agency the exclusive jurisdiction over a particular public interest. However, the agencies may compete to win political acceptance of mutually exclusive goals such as wilderness maintenance or hydro-electric development for a specific region. If this happens they may attempt to usurp the legitimacy of the competing agency and thus the other agencies' public good. This will help minimize the uncertainty in their task environment.

3. **Internalization**: Government agencies acting as advocates for their constituents in society help break down closed information generation by making the planning process explicit. Plans from any particular agency need not necessarily be accepted. The competition to advance an agency's own position or detract from another's should therefore expose the wide range of alternatives necessary for groups within society to come to their own decisions.

4. **Professionalization**: Another consideration of institutional behaviour which is not explicitly recognized in the pluralist organization is the tendency of agencies to have goals that reflect
the education and background of their staff. Sewell (1971) in a study of the perceptions of British Columbia engineers and public health officials found that "their views seem to be highly conditioned by training, adherence to standards and practices of the respective professions and allegiance to the agency's or firm's goal or mission". (p. 33). In addition, he found that they feel they are highly qualified and that they act in the public interest. They feel contact with representatives of other agencies or the general public is either unnecessary or potentially harmful. To help overcome this isolationist tendency the staffing of the agency should reflect the values of its constituents.

ENVIRONMENTAL REVIEW AGENCY

The preceding discussions have indicated that the pluralist approach has many advantages in terms of emphasizing some of the basic values of our society. Unfortunately, the discussion also indicated that some basic faults and a number of organizational drawbacks may prevent an equitable outcome to this planning approach. Unrepresentated and unorganized interests, organizational complexity and biases, limited knowledge, rational individualism and group intransigence are some factors that frustrate pluralist planning as a self-regulating process that produces near optimum solutions. A more explicit advocacy approach that accepts pluralism yet compensates for some of its shortcomings is needed.
An environmental review agency may be what is required to ensure effective environmental representation in the planning for major energy and resource projects. The agency could be designed to seek out environmental views in society, produce studies and reports on proposed projects to inform these views and advocate its findings in the internal government bargaining that proceeds development of major projects. The review agency would provide a countervailing force to the power and development interests.

"Pluralism", Dyckman (1971) writes, "has no mechanism or even ideology to adequately rationalize group conflict engendered by the clash of community interests" (p. 331). Environmental advocacy planning does not solve these problems but it can perhaps define the issues and relevant interest more clearly for the elected officials who must ultimately make the final trade-offs between growth and environmental values.

CRITERIA FOR INSTITUTIONAL DESIGN

The preceding discussions on normative values that people hold and on the problems for institutional design lead to a number of criteria that reflect these considerations (as well as the perceptions of this reviewer).

Public Participation and Representation

Planners and politicians are not omnipotent. If their actions are to account for public preferences, that public or
their representatives must have the opportunity to significantly contribute to and influence the planning process. Also, the major interest groups within society should have advocates in both the political and technical spheres of government to reflect their interests in planning and decision-making.

**Information Generation**

The planning process must produce sufficient information so that individuals and groups can assess for themselves the impacts of particular policies and projects and their alternatives. This criteria is of particular relevance to parliamentary societies where only a prodding and criticism of the opposition parties offers an institutional check on government power.

**Efficiency**

Institutions should, as far as possible, be bounded in jurisdiction to the public goods that they produce so that the externalities and spillover effects may be internalized. Also, the provision of such goods through planning should be provided in the most efficient manner given the goals of the constituents.

**Equality**

The pressures towards unequal representation in government due to the economic system and the difficulties of group organization should be recognized and efforts should be made to compensate for likely inequalities. The solicitation of interests poorly represented should be made by government agencies to facilitate equal representation.
**Professional Humility**

Institutions and planners should recognize that their techniques of analysis are fallible. Thus when dealing with groups at the margin of subsistence who are unlikely to be well represented special efforts should be made to maintain their welfare.

**Natural Justice**

Institutions in the pluralist framework should adhere to the principle of *audi alteram partem*, i.e., the parties with an interest in a proceeding should be given adequate notice and an opportunity to be heard before the decision-makers.

**Liberty**

There must be provision for free association of interests in society to build a consensus to influence government decision-making.

**Political Leadership**

The pluralist organizational framework should be used to provide a forum which fosters political leadership. Spokesmen for groups in society should be able to use the information available from government and the conflict of competing interests to define issues and focus attention on the critical arguments.
CHAPTER THREE

BRITISH COLUMBIA'S POLITICAL ENVIRONMENT

SUMMARY

Three characteristics of the political milieu in British Columbia are important for consideration of institutional design. First, the province appears to have a stronger materialist orientation than most regions. This factor in politics limits meaningful debate to financial considerations and tends to lessen the impact of the environmental quality values in decision-making. Second, within the province there are few strong interest groups upon which to base public-government agency liaisons. The lack of intermediate groups tends to polarize political debate and thus frustrates discussion of relevant alternative policies and projects. Third, the economy is dependent on resource extraction as an economic base. Although the preservation of the natural amenities of the province is a strongly held value, political success is oriented more towards ensuring economic growth, with a consequent increase in resource extraction and decrease in environmental quality. These considerations indicate that institutional reform is in order to reflect environmental values. However, these reforms may be difficult to make effective in face of an undeveloped interest group structure and a pervasive concern for economic growth.
INTRODUCTION

The political milieu within a region is one key element in guiding institutional behaviour within society. Differing lifestyles and perspectives from one culture to another will produce differing policies, programmes and projects to enhance the general welfare within the society. The political milieu will have a direct bearing on the form of development; a lack of understanding of the attitudes guiding development will frustrate attempts to design effective institutional frameworks to stimulate other social and political objectives. Too often planners assume a view of reality derived from an academic discipline or from another geographical region and then impose techniques and structures compatible to their own background but alien to the society in which they are working. The results are often wasteful, if not destructive of intricate social and political relationships that hold the society together.

This chapter intends to explore the political milieu of British Columbia in the context of decision-making for the preservation and the planned use of natural resources within the province. In British Columbia, it is especially important to consider the factors influencing political attitudes because the provincial government has control of all natural resources and thus is directly responsible for their development. The focus of this chapter is on the characteristics of the political environment and the implications these considerations have for institutional design.
The Setting

Premier Bennett and the Social Credit Party have dominated political activity in this province since 1952. Former Federal Agriculture Minister Alvin Hamilton comments on this period that the Premier and his Government "operating within the constitutional responsibilities assigned a province, has changed the map, the tempo and the economic structure of British Columbia. We may not yet reckon all the costs. We may not yet appreciate all the benefits. But these things have occurred because of provincial leadership – and, I would be willing to state, provincial leadership alone" (Sherman 1966, p. viii).

Though the most manifest feature of the political milieu is the present provincial leadership it would be wrong to consider the Social Credit leadership and its "politics of personality and hyperbole" as the milieu itself. The lifestyles and the socio-economic structures that have evolved within the province easily tolerate this extravagant political style. Another party, if it were to win power, might be more subdued but the underlying political characteristics might not radically alter political behaviour. If this style of politics is pervasive then the design of new institutions cannot wait until the present government is forced out of office. The new institutions that emerge must be designed to withstand the pressures the political environment generates.

An examination of this political milieu reveals three important characteristics that make British Columbia different,
at least in degree, from most other areas in the country. These characteristics are the essential materialism of the province, the lack of mediating interest groups within the political structure and the dependence on natural resources for economic growth. These features influence the way the government institutions operate and the manner in which natural resources are treated.

**MATERIALISM**

Most Western societies have a strong materialist bias but their political activity is tempered by non-economic constraints of tradition and socio-cultural loyalties. In British Columbia, on the other hand, there are few non-economic considerations to direct political debate. Though there are a number of political alternatives to the existing Social Credit Government they all share the same basic materialist or, with respect to the environment, utilitarian orientation.

**Social Credit**

The ruling Social Credit Party is above all, economically oriented. Unlike their Social Credit brethren in Alberta, the British Columbia party has been a prosperity party. The party emerged from the corruption and the political stagnation of the post-war years on the mounting wave of the early 1950's economic boom. It was not a protest party reacting to the economic system that allowed the depression but a new vital rejuvenating force.
For the party, prosperity has always meant resource extraction. The Premier's vision has focused on the development of an infra-structure upon which the natural wealth of the province could be extracted. The massive spending on roads, the extensions of the Pacific Great Eastern Railway, the oil and gas pipelines and the giant hydro-electric developments have all been essential in giving this dream a concrete structure. This infra-structure was to benefit "not big business or big labour but ordinary people". Within the grand scheme public investments that do not generate further investment capital, such as education and welfare, receive minimum support.

Other Parties

The other political parties play essentially the same economic games. The stakes are the same, political power; and the rules are the same, the manipulation of economic policies and criticism to ensure continued prosperity. Only the tactics vary. For example, the New Democratic Party in the dispute over the various alternative sites for the dams on the Columbia River, favoured the federal government's McNaughton Plan. They felt this plan would give the province greater economic benefits even though it would flood more of Canadian land in the East Kootenays than the final Libby Dam proposal. The concern was not for the environment or the dislocation of residents but with the financial return of the projects. The whole tortured two-river controversy was essentially
which development and/or combination of developments was financially feasible and would maximize the financial benefits? Black comments on the limits of debate over resource development "even when the perspective is adopted that the resource belongs to the people and ought to be developed for their benefit, the questions of which people? and Today or Tomorrow remain unasked and unanswered" (Black 1968, p. 33).

As environmental priorities are gaining some political support the economic orientation in political life is producing ambiguity. For example, in the recent International Joint Commission hearings over the proposed flooding of the Skagit Valley the testimony of two Liberal Party politicians, Pat McGeer and Dave Brousson railed against the flooding of this environmentally important valley. After enumerating the significant features of the valley they concluded their argument by saying the Provincial Government was accepting a ridiculously low compensation price for the flooded land (I.J.C. 1971). The price was not right. Tactically the argument might be justified as a means of raising the cost of development for Seattle City Light beyond their willingness to pay, thus forcing them to abandon the project, but the rationale was not strongly put forward.

Immigration

More than half the population of British Columbia was not born here. Many of the people were drawn by the economic
opportunities the region offers. For some people these opportunities may mean the chance to engage in some private enterprise while for others the high wages offered by the labour union movement may be the attraction. In addition to the economic motivations the natural amenities the area offers are a further inducement to immigrants.

Black argues that the steady influx of new people has inhibited the growth of local customs and traditions. Even those people who were born here have not been able to successfully develop cultural identities because many of their teachers are also new to the province. With few local cultural values and with the continual influx of newcomers without political loyalties, the political parties have never been able to develop a solid basis for support. The only tradition that remains is the one which brought many people here, the desire to advance economically. It is this consideration that gives political life in the province form and substance.

Conservatism

Though the province is poor in customs and traditions there remains a strong conservative bias in political life. Robin (1966) feels this conservatism can in part be explained by the heterogenous nature of the agricultural economy. The diversity of agricultural production "has arrested the development of a homogenous rural culture and leadership..." (p. 204). Also the high capital investment needed for many of the types of agricultural production such as fruit
tree and dairy farming and the stability of agricultural markets relative to the monocultures on the prairies makes for rather genteel farmers. He writes that "the British Columbia farmer is more likely to be found reading Kipling than Marx" (p. 205).

Another, perhaps more pervasive strain of conservatism can be found in the religious nature of many people, especially among those people who support the Social Credit Party. The religious conservatism is not as strong as in Alberta, where the messianic qualities of "Bible Bill" Aberhart and his staunch disciple Ernest Manning gave political life in that province a blatantly fundamentalist tone. The religious fundamentalist in British Columbia is not necessarily the evangelical dry land farmer but more the "non-conforming" puritan who has rejected the establishment norms and institutions of his home and moved West to build a career in a less encumbered society. The former Easterner, Premier Bennett, who almost turned down a political career for the ministry, reflects these fundamentalist feelings of his followers in such policies as his liquor and tobacco legislation.

**Man-Nature**

Basic to any culture is an expression of a Man-Nature relationship. In British Columbia with its undiluted materialism and fundamentalist inclinations the interpretation offered in Genesis 1:20-28 is likely to be the most widely accepted. "Man is to have dominion over the fish of the sea and over the birds of the air and over every living thing that moves upon the earth".
Clacken (1970) feels that Western society has interpreted this contrast between Man and Nature as the struggle with and the control over nature to depict the progress of civilization. He writes "in its material aspect civilization meant this - the purposive changes in nature, the overcoming of natural obstacles by bridges, drainage, roads ..." and we might add pipelines, railroads and dams (p. 131).

This interpretation may be especially applicable to British Columbia. Since the province has few traditional cultural measures of civilization large-scale projects may not only be symbols in the political game but they may be used to satisfy a quasi-religious measure of the region's level of civilization.

Consequences

Glacken argues that this exploitive view of nature is modified by the perception of cumulative damage, but the still prevalent utterances by politicians about the "boundless wilderness" and "limitless resource opportunities" indicate that this Board of Trade verbiage may limit perception of the costs to the environment until we are all too aware of them. With the materialist culture there is little countervailing pressure to force a critical examination of resource exploitation and development policies on anything other than narrow economic grounds.

The assumption that the game being played is a variable sum game in which all the players can win, delegates the environment to
the role of a bank with inexhaustible reserves. Emerson's holistic observation that "more is less" is only beginning to have significance in the political life of this province. The recent environmental movement is at least introducing the vocabulary of restraint into the political bidding. However, it may be some time before even the limited precepts of welfare economics that recognize the externalities and spill-over costs and benefits of development become fully understood within the political milieu.

INTEREST GROUPS

The second major characteristic of the political system appears to be the relative lack of interest groups within the province - an exception being labour unions. Black (1968) considers arguments that powerful economic lobbies control decision-making in the present government to be unfounded. Rather, he sees the Social Credit Party as an "institutional protest against established social elites". The relatively well educated English speaking immigrant to the province has no need of ethnic bosses to help integrate himself into his adopted society. Instead, the government can appeal directly to the materialist and often anti-establishment sentiments that have drawn people here.

Principles and Practice in Politics

The problem of maintaining a consistent political posture over time is not easy. Parekh (1908), a commentator on political philosophy, writes that a political activity over time "tends to
acquire a number of features that tend to pull in a different direction, causing concern among its practitioners as to what precisely it is doing in its name" (p. 153). Robin (1966) writes that the fundamental principle of Social Credit is the preservation intact of a modified free enterprise system. But the Social Credit Government has enacted some of the most socialist legislation in the country. The expropriation of the B.C. Electric Co. and the Black Ball Ferries and the introduction of homeowner grants are just some of these policies. Sherman (1966) comments on Premier Bennett's conception of free enterprise: "it is a divisible, flexible thing. He used to favour free enterprise, period. Then when it became politically necessary, he said he was against monopoly free enterprise. Finally he became a main-street free enterpriser. Semantically, in fact, he became Everyman, tilting with Everything Big, and letting every man know about it" (p. x).

This socialist tendency has been explained by the government as State Capitalism, the provision of the necessary infrastructure so that the "main-street entrepreneur" can have the opportunity to share in the wealth of the province rather than leave resource exploitation to the established economic giants. Black (1968) has pointed out that again this entails a contradiction for to economically exploit the region's resources only large scale enterprises can afford the necessary capital investments to ensure the rational use of the resources. A small lumber firm, for example, can afford only to cut down the best trees, leaving the rest as waste.
Only a large company can invest heavily in equipment that can then make use of what would otherwise be left. A low level of economic activity with a high level of waste can be tolerated but as pressures increase on the resource base, more efficient use is imperative. Thus of necessity in time the government must learn to accommodate the economic elites at the expense of small-scale entrepreneurs.

**Anti-Establishment Bias**

Sproule-Jones (1972) attempts to prove that the anti-establishment bias in British Columbia politics is not significant. In an electoral analysis of the voting patterns in the Saanich electoral district he found that the unorganized working classes and the lower middle classes are not strong supporters of the Social Credit, while the managerial elites are not repelled by that party. Only the support of the small and middle sized businessman, he argues, supports Black's anti-establishment thesis.

Sproule-Jones' correlation analysis indicates only that first preferences for the other parties are not strong. In fact, the electorate's lack of strong identification with other parties may partially support the idea of anti-elites for the voters may appreciate the position of the other parties but are not infatuated with the politicians. The survey just confirms the perennial observation that the Social Credit Party always wins the elections but no one knows anyone who voted for them.
Issue Manipulation

Without many influential intermediate groups to help define the issues for the electorate, the weakly committed voter has the issues defined for him by the political parties. Sproule-Jones (1972) explains, within an American frame of reference, that electoral alternatives are rarely structured in ideological terms. Rather, issues are determined through feedback between the electorate and the politician.

In British Columbia, however, there is strong ideological conflict in elections. Robin (1966) explains this conflict in terms of class cleavages between the possessing classes in favour of free enterprise and the working class socialists. But the relative prosperity of the trade union movement weakens any argument about class cleavages. Sproule-Jones' (1972) explanation of "sponsored conceptual ideology" is more satisfactory. He argues that the government can define the election issues in dichotomous terms and then the electorate is forced to decide all issues within this one dimensional perspective. For example, in the 1960 election, P.A. Caglardi defined the issue as: "We don't want any Jimmy Hoffas in B.C. We don't need gangsterism in labour." -- despite the fact there had never been any suggestion of gangsterism (Sherman 1966, p. 186). In the 1969 election Premier Bennett defined the election issues as "free enterprise" or "socialism". The lack of mediating groups that might influence voter behaviour has left the electorate directly exposed to a "one-step flow of information" coming from the governing and opposition parties. The
inability of the electorate to gain any kind of a perspective on the real issues involved forced the independent and weakly identified partisan voter into the Social Credit "camp" at election time. (Sproule-Jones 1971). In the 1969 election, the debate over "free enterprise" or "socialism" was presented in such strong black and white terms that many traditional Liberal Party supporters and close friends of the Liberal Party Leader, Pat McGeer, voted Social Credit. The ability to define issues in this manner lessens the need to define a consistent political posture for the practices not in harmony with basic principles can be glossed over in the Manichean political debates that precede elections.

**Plebiscite Democracy**

Once in power the government is not much bothered or constrained in its actions by well organized lobbyists. This situation suits the philosophy of government expressed by Premier Bennett:

> True democracy is that the elected must govern, and must not be governed by the electors... If the electors govern, you have anarchy. In other words, people in a democratic way select people to do a job. Then they must have authority to do a job and they must boldly do that job, and they must not ask questions and have royal commissions all the time. They should take responsibility and bold actions. Then when election time comes, the people should kick them out if they are not doing the job. (Sherman 1966, p. ix).

Black (1968) calls this political philosophy Gaullist. Political legitimacy conceived as such a direct mandate has immediate con-
sequences for the design of any government institution that has pretensions for rational management.

Consequences

The first consideration is the difficulty of ensuring that views counter to government policy can have some effect in political decision-making. At present professional and interest group views conflict with distressing frequency (Black 1968). Pearse (1968) picks up this theme in a discussion of British Columbia's natural resource policies. He sees experts on natural resources divided into three schools of thought, the "conservationists", the "promoter", and the "technocrats". Each group feels its point of view maximizes the net benefits of resources for society. Conservationists wish government to impose regulations and controls on resource development to enforce restraint and prudence on the part of private industries in natural resource development (p. 49). The promoters think natural resource exploitation is the key to growth while the technologists set out to obtain such goals as "maximum physical growth of timber or fish, and an equal annual harvest, without reference to whether these objectives represent the most desirable systems on economic or social grounds" (p. 50). The latter group exists largely within the civil service. The promoters, in that they are action-oriented, have a sympathetic ear in the Social Credit Government. The conservationists, till now, have been a weak coalition of wildlife and hunting groups. The weakness and conflicting opinions of these
groups allow the government to manipulate their views rather than trying to win a consensus of opinion.

A second consideration is the difficulty of ensuring the rational utilization of expertise within the government. The Social Credit Government does not broach interference from experts but it recognizes their values. Sherman (1966) states that Premier Bennett is eager for advice in making policy but "that no one man was his advisor. He listened to many men and their advice. He kept some, rejected some, amended some and his policy formed more or less instinctively" (p. 246). The dispersion of expert advice into fragmented government departments without any coordinating boards to rationalize overall policies is at present the simple technique used to defuse possible internal civil service constraints on power. In a political structure that rules through direct power with little countervailing political pressure any form of planning or comprehensive information generation other than the government's eclectic utilization of expertise will be difficult to institute.

RESOURCE BASED ECONOMY

The third major characteristic of the political milieu is the dependence on resource extractive industries as the basis for economic growth. The high standard of living that attracts many people to the province is directly dependent on natural resources. Though the direct contribution of the extractive sector of the economy is less than 10% most of the remaining sectors are
dependent on these industries. For example, in 1961, 60% of the manufacturing sector was involved with the processing of raw material while much of the remaining manufacturing was "either auxiliary to the basic resource industries or by-products of these industries" (Shearer 1968; p. 11). And, of course, much of the service sector is auxiliary to the basic sector. It is apparent that the extractive industries have a high multiplier effect throughout the region.

The severe fluctuations in economic activity in British Columbia suggests that these products have a high elasticity of export demand. However, the comparative advantage the region enjoys in extractive industries has tended to favour further exploitation of the resource base to overcome depressed markets rather than developing a more diverse economic base. The victims of this vicious circle are the natural amenities offered by the region.

Natural Amenities

In addition to the high standard of living offered by the province another reason people migrate is the natural amenities offered by the region. These qualities are also the basis of the economically important tourist industry. When the population was smaller and resource development proceeded at a slower rate, the wilderness and high quality recreational resources seemed inexhaustible. Now the population is increasing rapidly and the rate of resource
exploitation is accelerating. There are limits to the rate the region's resources can be exploited without seriously endangering the attractive natural qualities that so many residents enjoy.

Consequences

The emerging conflict between the retention of amenity values and resource extraction helps provide a justification for government reorganization to better air the conflict. But it will still be difficult for the environmental arguments to be respected. The politicians are not likely to endanger the region's export base upon which their political stability ultimately depends. With regard to government agencies, Black (1966) argues that the government cannot possibly afford to hand over policy-making in critical areas. Political success relies too much on continued economic development for any conflicting expert to carry any weight.

CONCLUSION

The consequence of failing to account for the pressures the political culture generates in the design of government institutions in British Columbia is likely to lead to an ineffective and irrelevant administrative body. New institutions must challenge the resource-exploitive assumptions of economic development upon which political leaders satisfy their materialist oriented electorates. Also they must attempt to influence political decision-making in governments that have little need to placate pressure groups or desire to base policies upon comprehensive planning principles. This will be
a difficult task. Hopefully as the province matures the residents will recognize that the quality of the environment is an important aspect of the standard of living and will introduce this concept as a significant restraint to the political process.
CHAPTER FOUR

CASE STUDY: THE W.A.C. BENNETT DAM

SUMMARY

When the power potential of the Peace River was revealed in 1957, a large-scale hydro dam to develop the river's potential became a top priority of the government. It satisfied a number of goals and political criteria which from the government's perspective no other project was likely to meet. Political debate over the project centered on whether it was a better alternative than the Columbia River dams. There was not a clear understanding in the debate that northern development was as powerful a goal as power production to the government. Thus there was no real discussion of the validity of the goals or discussion of alternatives to meet these two major goals.

With the decision made early in the planning process to promote the development of the Peace project the role of planning became to determine whether the project was feasible. The organizational structure of the government for such projects in British Columbia is strongly biased in favour of engineering concerns. Thus evaluation of the physical site plans was extensive. Financial feasibility also received much attention. There was little economic or environmental input into the overall project evaluation. This was a reflection of the attitudes of the time,
The problem today is that the attitudes have changed yet there have only been minor modifications to institutional structure. Hence the planning and decision-making practiced during the Peace project (and with some changes practiced today) are quite different from the ideal model as expressed in terms of the criteria derived in Chapter Two.

INTRODUCTION

There is no "absolute" objective function or social welfare function from which planning and decision-making policies can be rigorously derived. Without rigid direction from above planning and political values cannot help but intrude on the decision function. If the alternatives and evaluations produced are to be biased they should at least attempt to reflect the biases of those groups in society concerned with the outcome of the final decision. This perspective was developed in Chapter Two. In this chapter the criteria derived from that perspective will be used as the standard by which to evaluate the planning and decision-making for the W.A.C. Bennett Dam on the Peace River.

The concern of this thesis for the representation of environmental values in decision-making has only recently become a significant political value. Thus discretion is necessary in examining the environmental input into planning. However, the purpose of this examination is not to see whether these values were included in the development of the project. The purpose
is rather to examine the inter-action between the political element and the technical and organizational structure to find out whether the criteria are incorporated into the planning process. It is the criteria that makes possible the representation of environmental values in decisions for large-scale power projects. Therefore, the evaluation of planning in terms of the criteria determines the suitability of the planning and decision-making process.

The process of planning includes the following elements which will serve as the framework of investigation:

1. **Goal Identification**: the expressions of desirable future conditions that satisfy felt needs within society and that give direction and meaning to planning.

2. **Alternatives**: the formulation of alternative methods of action to achieve the goals of society subject to basic political, professional and ethical constraints.

3. **Feedback**: the contribution of elements outside government to the planning process.

4. **Reformulation**: re-working objectives and plans in accordance with the changes suggested by government and the public.

5. **Decision**: final choice by the political authorities.
Many problems remain in defining these elements of planning more specifically. For example, goals, objectives and action alternatives lie on an ends-means continuum. The given context may determine whether a goal is actually a goal or merely an alternative means of action (Bromley, Schmid & Lord 1971). However, the identification of these elements, even if vague, does provide a framework with which to study the planning process for a given case study.

GOAL IDENTIFICATION

The Wenner-Gren Development Co., a Swedish company intent on exploiting the resources of northern British Columbia with the government's blessing (Memorandum of Agreement 1956), discovered the hydro-electric potential of the Peace River in 1957. Previously the river was thought to have a potential of just 500,000 kilowatts, but Wenner-Gren Development estimated its potential at over 3 million kilowatts.

Once the power resources of the Peace River were established the government pressed Wenner-Gren Development and its successor Peace River Power Development Co. (incorporated in November, 1958) to proceed with a large-scale power dam. The government had found a project that could satisfy two important goals - development of the north and the development of energy sources to meet long term power needs (Williston 1959-1962). In addition, such a power project was seen in 1957 as means to get the province's economy moving (Williston,
quoted in *Province*, Feb. 13, 1965). The energy goal was given a high priority because of a forecasted power shortage by 1968. In the context of the goal of northern development a massive project on the Peace River was a means to achieve that end while also solving the impending power problems. Sherman quotes Williston, Minister of Lands, Forests and Water Resources, as listing six benefits from a dam on the Peace River that would facilitate development of the north:

1. A Peace River dam would assure an industrial power supply that would attract integrated resource industries like pulp mills.

2. A servicing area would be developed near the dam site that would be suitable for further expansion once the dam was completed.

3. Increased construction activity in the area would make possible road and rail extensions.

4. The reservoir would provide water routes to hitherto inaccessible regions.

5. The reservoir would permit large scale timber salvage and open new areas for forestry exploitation.

6. Also, the reservoir would open up a vast area for recreation (*Province*, Nov. 23, 1962).

In the late 1950's and early 1960's much of the debate over the proposed power project centered about the goal of power development —
which was the better river to develop, the Peace or the Columbia? But as Krutilla (1967b) points out, the government regarded the two hydro developments as separate instruments for achieving different goals, not as alternative sources of future electrical energy. Williston (1972) argues that the government believed both projects would be necessary and the Columbia projects would be built no matter what happened. But if the Columbia project was developed first, the Peace would have to wait perhaps another twenty years. The opportunity to develop the north at that time would thus be lost.

A notable feature of the whole controversy was that there was little debate over the goals. They were handed down by the political party in power, Social Credit, and few people chose to question whether they were appropriate for British Columbia or not. Not many people realized that the Premier was deadly serious about northern development, that it was essential to his political vision, and thus there was little discussion on the goal and the objectives needed to accomplish this end. The power goal was accepted and the debate ranged only over the means to achieve it. Without a clear understanding of what the government had in mind much of the debate was wasted.

ALTERNATIVES

Braybrooke and Lindblom (1963) describe a situation in which public policy problems arise not from the identification of
an unachieved goal but by the identification of a new means, useful in achieving a variety of ends. Planning in this context is turned upside-down. There is no agreement on overall objectives; therefore comparison of alternatives is meaningless. The extension of this situation is that the analyst determines whether the project is technically feasible; the politician, especially if he proposes the policy, determines whether the electorate will accept it. This situation appears to illustrate what happened with the Peace project and why so few alternatives were discussed.

The Peace project, when it became a possibility, satisfied a number of political criteria which restricted the search for further alternatives. Besides the two major goals mentioned previously the project could dramatically illustrate to the public the government's vision and dynamic character. In addition to satisfying the government's political image, the project gave the government a strong bargaining position in the negotiations with the federal and American governments over development of the Columbia River, an important political objective.

The Columbia was important to British Columbia only if the province could receive downstream benefits related to the value created. This was a concept the Americans were reluctant to accept, especially when they felt that British Columbia would be forced to develop the Columbia anyway to meet future power needs. Williston (1960) commented on the resolution of this situation in a Throne Speech Debate:
... as soon as the power potential of the Peace River was known, a change in American strategy became evident. The desire to negotiate finally became so keen that it has been difficult to find time to formulate and adopt a united Canadian position on the best Columbia plan of development (p. 14).

As mentioned previously, the Columbia was not, in the government's view, an alternative to the Peace but another less important goal. Other alternatives to the Peace were unlikely to maximize the political values it represented, especially the visionary component. Therefore from the Premier's perspective such alternatives would be less than optimal. Needless to say, a policy that maximizes political advantage, as the ruling party sees it, does not necessarily maximize social welfare particularly when society is left unaware of possible alternatives.

There was only one organization outside government that had the resources and expertise to come up with alternative plans to meet the province's power needs. This was the British Columbia Electric Co., the largest power utility and potential market for electricity in the province. The company's planners actively sought out alternatives by looking at the Peace River, the Columbia River and their own interests in the Hat Creek coal deposits. The company refused a long-term commitment to what it considered non-competitive Peace power. Also, in 1960 the company's engineers forecast a dropping off in the load growth curve (Mainwaring 1965). The load growth turned out to be 9.97%, not the 6.4% estimated. The company agreed only to buy power from the Peace at the rate it
received "dump power" from the United States, a rate less than half of the estimated cost price of producing it on the Peace. The company's expropriation on August 1, 1961, for refusing to sign a letter of intent to buy Peace power illustrates the high priority the government gave to the Peace project.

As the debate progressed there was little public concern that no alternatives to the Peace project were being developed. The analysis and criticism that did emerge was, in large part, a spinoff from criticisms of the Columbia projects and nationalist feeling against the Columbia Treaty. A group of University of British Columbia professors, including J.D. Chapman, A.D. Scott and H.V. Warren, produced a report criticizing the Columbia Treaty and as a side issue the Peace project.* They concluded that both the Columbia and Peace projects were more expensive than a Moran Dam, Hat Creek coal or the Burrard Thermal Plant (Chapman et al 1962). The report recommended that "the Peace River project be delayed until, by comparison with these other projects, it is shown to be the most desirable" (p. 10). F.J. Bartholomew, a retired electrical engineer and determined nationalist critic of the Columbia Treaty, in developing his criticisms of the Columbia, arrived at much the same conclusions (Correspondence F.J. Bartholomew to R.G. Williston April 24, 1963). Jack Davis (1963), former director of planning and research for B.C. Electric and present federal Minister of the Environment, called for

* A.D. Scott 1972: personal communication.
the government to forget the expenditure it had made on the Peace and reconsider the project. He felt cheaper and smaller scale thermal alternatives were more appropriate for the province. The criticisms from private sources were derived from already published reports. These groups did not have the resources to fully develop and substantiate their arguments.

**EVALUATION**

As suggested by Braybrooke and Lindblom's example the evaluation process for the Peace project was largely restricted to determining the feasibility of the stated political policy.

**Engineering Evaluation**

A non-engineer has difficulty assessing the adequacy of the procedure used for dam design. Therefore only the steps in this procedure will be outlined and a few observations included.

1. **Site Tests and Dam Design: 1957-1959.**

In October 1957 Wenner-Gren Development committed itself and its successor, the Peace River Power Development Co., to testing the engineering feasibility of a high generating capacity Peace River dam. If a dam was proven feasible a comprehensive plan providing for the maximum economic development of the Peace River's potential was to be submitted to the Comptroller of Water Rights before December 31, 1959 (Memorandum of Agreement October 1957). James and Lee (1970) in their water planning textbook suggest that this phase
of a project usually takes a minimum of three to five years. Working under tremendous pressure to complete the plans the engineers and Peace River Power Development Company finished the feasibility report by the deadline (B.C. & B.B. Power Consultants 1959). The forecast power shortage was the stated reason for the rush but the more substantial reason appears to have been the government's desire to come up with an alternative to counter the federal government's Columbia River proposals (Mainwaring 1965).

The eight volume plan proposed the largest earth-filled dam then in existence. A 650 foot high dam was to be constructed at the head of the Peace River Canyon. It was to have a 2,535,000 kilowatt rated capacity based on a 60% load factor. In addition a smaller dam, Site 1, with a 650,000 kilowatt rated capacity on the same load factor was proposed for the foot of the canyon. The longest and highest capacity transmission system outside of Russia was proposed to carry the power in 500,000 volt lines from the dam to the tie-in with the B.C. Electric grid at Lillooet.


The preliminary review of the site plans by the Water Comptroller before application for a water licence was a special feature of the agreement between the government and Wenner-Gren Development; the British Columbia Water Act makes no provision for such evaluation. The Water Comptroller, Arthur Paget, disclaimed any competence to review these plans with his small staff. Hence, the government spent $200,000 getting independent evaluations. The Comptroller reported
that the plan was feasible from an engineering point of view. He recommended that further consideration be given to proposed slopes of the dam. As well he recommended that the dam have a minimum of 25 feet of freeboard instead of the 15 feet shown in the plans. He did not report on the economics of the project although he did say that if another project was constructed there would not be a market for the power from both schemes in British Columbia.


B.C. Hydro and Power Authority, the publicly owned successor to B.C., Electric and Peace River Power Development, had their own consultants review the plans and substantial changes were made. Site 1 was dropped from immediate consideration. The dam height of 650 feet and the maximum reservoir level of 2,250 feet above sea level were reduced by 50 feet with 30 feet of freeboard.* These changes decreased the volume of fill needed for the dam from 65 million to 57 million cubic yards and the reservoir volume from 88 million to 57 million acre feet. The reservoir under the new scheme covers 625 square miles. The smaller reservoir made it unnecessary to relocate parts of the Hart Highway, the Pacific Great Eastern Railway, the West-Coast Transmission gas pipeline and the Western Pacific Oil pipeline. The decrease in flooded area eliminated the need to reduce leakage in two natural saddles on either side of the river (Miles 1969). The generating capacity was reduced

* On April 4, 1972 an amendment to Conditional Water Licence No. 27721 permits B.C. Hydro to raise the level of the reservoir five feet to a maximum elevation of 2,205 feet above sea level, an increase in storage of 500,000 acre feet of water. (See Appendix A).
to 2,270,000 kilowatts but the design changes were estimated to cut the cost of the project by $100 million.


Further extensive review of the project occurred in 1962 when B.C. Hydro applied for licences to store 32 million acre feet of water a year and to release water during filling of the reservoir and for generation of power (Appendix A - Conditional Water Licence No. 27721 and 27722). The application was under review from February 1962 until December 1962. The International Commission on Large Dams was the consultant. The three members proposed a number of small changes such as altering the cross section of the dam to make best use of nearby construction materials.

Economic Feasibility and Evaluation

The government's political motivation for the Peace River and the Columbia River projects differed but much of the political debate was centered on which project would produce the cheaper power at the load center in Vancouver. Peace River Power Development had its consultants, Chantrill and Stevans (1961), do some preliminary investigation on the cost of delivering Peace power but the figures they derived were not for the load centers and thus they had little effect on the debate.

In late 1960 the Peace project was in jeopardy. B.C. Electric would not commit itself to buying Peace power and the
Columbia River Treaty was about to be signed. Faced with the problem of losing the market for the Peace electricity to the Columbia it appears that the Premier was receptive to arguments that severely criticized the Columbia River Treaty. His friend W.C. Mainwaring (President of the Peace River Power Development) who held very critical opinions of the Columbia Treaty takes credit for suggesting to the Premier that the B.C. Energy Board give an independent evaluation of both projects to come up with comparable cost figures. He advised that the evaluators should have had no connection with either the Peace or Columbia projects and offered to Dr. Shrum, Chairman of the Energy Board, a list of British firms that would satisfy this criteria (Mainwaring 1965).

Without a technical argument that could compare the Peace favourably with the Columbia further promotion of the Peace would be difficult to justify. The problem of what to do with the recalcitrant B.C. Electric would have to be handled in another more dramatic fashion. The federal government's failure to get complete approval from British Columbia before signing the Treaty gave Bennett the leeway to write a letter to Ottawa expressing "engineering and financial doubts" about the Columbia project. This allowed him to postpone an immediate commitment to development of the Columbia that would likely scuttle the Peace and await word from the Energy Board.

The Energy Board hired two British engineering consulting
firms, Sir Alexander Gibbs and Partners, and Merz and McLelland. They looked at the power delivered to Vancouver by both projects. Costs were examined in terms of 1. capital investment 2. method of financing 3. annual operating costs 4. market for the energy during and after completion of the project and 5. amount of energy provided at the load centers (B.C. Energy Board 1961). The consultants were also asked to look at thermal power. They looked at some figures B.C. Electric had compiled and concluded that thermal power "would not be any more economical than the development of the hydro resources in the Province" (Gibbs, Merz & McLelland 1961). They did not feel it necessary to investigate that alternative further despite the fact that it was the most promising alternative to Columbia and Peace power.

The Energy Board report, submitted the day B.C. Electric and Peace River Power Development were expropriated, concluded that private Peace power was not competitive with public Columbia power. But if the two projects were financed publicly the cost of power from each project was virtually indistinguishable. Also the "two river policy" was advocated for the first time from the technical side, if an export market could be found for Columbia power.

In retrospect, the 1961 Energy Board report appears to have been the most critical technical input of the planning and decision-making process. It provided the justification for the Peace project; it justified the expropriation of B.C. Electric and
Peace River Power Development; it justified the Columbia as being of lesser importance for it only accomplished one goal and that no more effectively than the Peace project.

As the report was crucial for subsequent developments some observations are in order.

1. Submitting his project to an independent review was a gamble for the Premier but the odds were stacked in his favour. He gambled heavily for he could not be sure what the report would conclude yet he went through with plans to expropriate B.C. Electric. Although the Energy Board report came out the day B.C. Electric and Peace River Power Development were taken over, August 1, 1961, the Premier had little warning of the happy conclusions of the report. For in June the consultants had, according to the terms of reference of their study, reported to Dr. Shrum that Peace power was not competitive with the Columbia. Shrum flew to London that month to find out why for he was sure it must have been comparable from the information he derived from earlier reports. When he discovered it was because of the increased cost of financing for a private concern he made the adjustment in terms of public financing. If the Peace had proven inferior the Premier would have been in an awkward position, having taken over B.C. Electric without justification. It is unlikely he could have proceeded with the Peace project (Shrum 1972; Williston 1972). But his gamble was in part based on support for the Peace by experts like Shrum, Paget and Mainwaring, who felt the Peace was a
competitive alternative. Incidentally, Williston (1972) comments that Mainwaring told him that if the Peace project was to go ahead, B.C. Electric along with his own Peace River Power Development would have to be expropriated to ensure a market and stifle federal opposition to the project.

2. For a report that was to signal the go ahead for a massive project the terms of reference for the study were very narrow. Only the costs of power were examined - no real economic analysis was considered, or alternatives developed. In defence of the terms of reference Shrum (1972) feels they were adequate for they reflected the concerns of the political debate at the time. He also commented that all the economists were so busy trying to determine the costs of the power that they had no time to consider benefits and costs. In fact, few economists in British Columbia were involved or even interested in resource projects of this kind. Electrical engineers were the only people concerned with the technical aspects of project evaluation.*

3. There is no formal economic or even financial review mechanism for this type of project. The Energy Board serves this purpose but only at the discretion of the cabinet. It is possible to conceive of a project, involving less controversy, proceeding without even this meager evaluation.

* A.D. Scott 1972; personal communication.
Environmental Impact Evaluation

When the Peace River project was conceived and developed the lessons of ecology were only dimly understood by the project's planners and decision-makers. Consequently the few studies of the effects of the proposed dam were single purpose; there was no attempt to relate the inter-connectedness of the project's impacts to achieve an overall environmental evaluation.

The Department of Recreation and Conservation in 1959 conducted a study of the then proposed 800 square mile reservoir to evaluate possible fisheries problems. The empirical investigation was funded out of department revenue and consisted of a five day canoe trip up the river by two men to count the number of fish species in the river.* A primary concern of the trip was to establish whether northern pike, *Esox lucius*, inhabited the river above the Peace River Canyon. D.C. Lindsey, a University of British Columbia fisheries biologist, expressed concern that northern pike might be introduced into the Fraser River system if the reservoir backed up into the swampy headwaters of a Fraser River tributary. Pike are predators of salmon and they carry a tapeworm parasite, *Triaenophorus crassus*, not yet found in Pacific salmon. No pike were found. The 20 page report that followed made four recommendations:

1. Efforts must be made to prevent entry of pike into the Fraser River drainage system.

2. Adequate clearing of the reservoir must be undertaken to ensure preservation of the fishing and general recreational worth of the reservoir under storage conditions.

3. Water releases sufficient to maintain fisheries requirements must be allowed to pass the dam during construction, reservoir filling and storage.

4. The development company should provide access to the reservoir and provide recreational facilities for the general public (Withler 1959).

No further investigation was carried out on the reservoir area till after the Water Licences were issued in December 1962. The water Licence stipulated that B.C. Hydro had to support a two-man $10,000 study, conducted by the Department of Recreation and Conservation, to investigate further the possibility of pike introduction to the Fraser River. The subsequent study concluded that this possibility was highly unlikely.

There were no other studies conducted by the government till 1968-1969 when, in advance of the rising reservoir waters, the same department investigated the habitat loss for moose. The purpose of the study, soon to be released, was to assess the loss of wildlife habitat within the flooded area and to examine the capability of the new perimeter area for wildlife support. The
Regional Supervisor for the Prince George District, R. Goodlad, comments that "financing was from normal operating budgets and was not adequate for more than cursory evaluation of the habitat".*

The federal government's Water Resources Branch and Inland Waters Branch conducted some studies of the hydrologic effects caused by the dam. Collier (1960) felt that the dam would lower the level of Lake Athabasca after it was completed. Coulson and Clark (1962) wrote that during the filling of the reservoir the maximum level of Lake Athabasca might be three feet below normal, an accurate prediction. Bailey (1971) comments that none of these early reports forecasted the extreme low levels within the Delta in the vicinity of Fort Chipewyn. A programme of sediment data collection in the Lower Athabasca and Peace Rivers was indefinitely postponed in 1962 because of austerity measures (Correspondence, T.M. Paterson, Director Water Resources Branch to A. Paget, Sep. 5, 1962). It appears that the flood control benefits and feasibility of hydro sites on the Peace in Alberta made possible with completion of the Bennett Dam negated the only expressed fear of the Alberta and Federal governments' possible navigation damage. No other studies seem to have been conducted by either of these governments till the dam was completed.

Coulson and Adamczyk (1969) found that low water in 1968 on Lake Athabasca could in part be attributed to the Bennett Dam. However, little concern was expressed. Dirschl (1970) indicated

the possibility of ecological damage from lower water levels in the Delta. By 1970 the damage to the Delta area from the low water releases from the dam and natural below normal spring runoffs became apparent and considerable political pressure was generated. Pamphlets like *Death of a Delta* (Peace-Athabasca Delta Committee 1970) and television programmes plus a symposium sponsored by the University of Alberta's Water Resources Centre (1971) promoted further government action. Perhaps symptomatic of past ecological myopia, an impressive inter-governmental and interdisciplinary research effort is being conducted to rectify the damage caused by the construction of the Bennett Dam, British Columbia, however, is not involved in any of these studies.

The few meager reports that were produced prior to construction of the Bennett Dam are self-evident expressions of the poverty of the environmental evaluation for that project.

**Social Dislocation Evaluation**

Within the reservoir area there were 38 Indians, 6 resident farmers, 6 summer residences and 14 traplines. Consequently there was little social constraint to influence decision-making. The lack of comprehensive environmental impact studies, of course, blinded the government to the disastrous economic and social dislocation the dam would cause to the 1500 natives of the Peace-Athabasca Delta.

Planning's evaluation function did impose constraints on the political sphere, but in the sense Bromley, Schmid and Lord (1971)
suggest. Where the real reasons for a project are not explicitly stated or not fully understood the monetary measure of the project's feasibility becomes the principal constraint. These writers suggest that a benefit-cost ratio of at least unity becomes the criteria for acceptance; for the Peace project, a cost of power competitive with the Columbia became the criteria. Like the benefit-cost ratio, the cost figures were "the focus of concern and criticism, while the real but unstated objectives of planning drew little attention" (p. 1). Needless to say such analysis precludes explicit evaluation of the whole range of quantitative and qualitative benefits and costs that arise from a project. Hence the project is developed without a full understanding of possible impacts that may result.

FEEDBACK

Since inputs to the planning process came from a number of departments and private concerns and there was no formal arena to coordinate these inputs it is difficult to determine what ultimate consequences were influenced by outside review. The final engineering design of the dam was quite different from the original design, the result of extensive, though internal, government review and feedback - an interplay between the Water Rights Branch, their consultants, and initially Peace River Power Development, their consultants followed by B.C. Hydro and their advisors. But the impact of other contributions is less easy to discern,
Legislative and less formal provisions of the planning process provide one indication of the range of outside inputs that may be incorporated in planning. Whether or not these inputs are utilized provides evidence of the effectiveness of outside feedback. These provisions, in the context of the Peace project, include:

The B.C. Water Act

The Water Act, A.S., B.C. 1960, c. 405, denies the common law concept of riparian rights and gives to the province "the property in and the right to the use of all water at any time in any stream in the province" (Section 3). Private rights are granted under licence. Thirteen rights to water are listed in order of priority in the Act, from domestic purposes to conveying and land improvement purposes. Power is listed seventh; there are no provisions for fish, wildlife or recreation purposes (Paish 1967). Those persons who hold rights to water can object to a new application for water rights if there is a possibility the new user will endanger existing rights. Established rights take precedence in order of the dates of the licences. The only other entities that can object to a new application are the Deputy Minister of Agriculture, the Deputy Minister of Recreation and Conservation and the Deputy Attorney-General. The Comptroller, at his discretion, may call a public hearing to hear all those who are entitled to object (Section 9.2) or for his own information to determine any matter under his jurisdiction (Section 29).
For B.C. Hydro's application two hearings were called, one in Chetwynd on August 2, 1962 under Section 9.2 and another in Victoria on October 15, 1962 under Section 29 of the Water Act (Water Comptroller 1962). There were 70 formal objections to the application, that is there were 70 legal entities with rights affected by the application. In the first hearing representatives of B.C. Hydro were at hand to answer questions of the objectors and the Comptroller. Of the objectors only some major petroleum interests, a representative of Indian Affairs and the Department of Recreation and Conservation made presentations; a few individual objectors with mineral interests had their letters read into the record. Most of the objectors were only concerned with compensation.

The representative for the Indians in the area presented a brief; his aim was to have flooded reservation land replaced by provincial Crown Land rather than receive monetary compensation. A Fish and Wildlife fisheries biologist testified that the reservoir would devastate the big game in the area by wiping out essential grazing area and disrupting the migration patterns. There had been no field investigation to evaluate the extent of this loss. Based on the findings of the scanty 1959 report prepared by the Branch on possible fisheries problems in the reservoir the author of that report testified that grayling game fish in the river would be diminished, while lake trout would likely flourish. Again concern was expressed that northern pike might be introduced into the Fraser system. Finally the recommendations of the earlier report were read into the record (Withler 1959).
An interesting exchange took place between the Comptroller, A. Paget, and B.C. Hydro's Chief Engineer, J.H. Steede. B.C. Hydro had no schedule of water releases to be approved. Steede said that releases would be at the Comptroller's discretion. Paget replied that an "arbitrary exercise of the power of ordering releases could destroy the economics of the project, because you couldn't meet a production period in 1968 if I set some high limit on water releases" (p. 45). Steede then said that the design for the turbines was based on the assumption that there would be sufficient storage for them to operate by September, 1968. The impression was left that the Comptroller was expected to authorize releases that would meet the operating deadline. This impression was rather confirmed by subsequent events when minimum releases of 10,000 cubic feet per second (cfs) set out in the water licence were amended to as little as 1,000 cfs at B.C. Hydro's request in 1968. This change was to compensate for the unusually low spring runoff that year (Amendment to Clause (q) of Conditional Water Licence No. 27722, July 15, 1968).

According to the Water Act prior licences take precedence over new applications. Paget in the hearings expressed this principle as "our instincts are always to protect our licensees, and after that, of course, we worry about the new applicants". The hearing in Victoria and a substantial amount of the water licence application correspondence files are devoted to the objections of
West-Coast Transmission. The company's McMahon Refinery at Taylor, downstream of the damsite, held a prior licence and the company officials were concerned that 1. there might not be enough water to meet the company's needs as the reservoir filled 2. low water levels might expose the refinery's water intake, and 3. a change in water temperature resulting from the dam's operation might affect the plant's operation. This latter objection was dismissed by the Comptroller as being outside his jurisdiction. Otherwise the company was successful in influencing the water release schedule to meet its needs.

These hearings were the only opportunity for outsiders to directly participate and influence some of the major actors in the planning process, namely the Water Rights Branch, the Comptroller, and B.C. Hydro. The participants were restricted to the Department of Recreation and Conservation and those entities who held rights to the water. And of those who were entitled to participate it appears that only those large corporations with the resources to sponsor lawyers and technical witnesses felt competent to participate. As only six farms were in the proposed reservoir area, the Department of Agriculture likely felt it had no special interest to protect and thus did not appear.

The Navigable Waters Protection Act

Procedures for dam construction should, on a navigable river, be approved by the federal Minister of Transport, as specified
in the federal Navigable Waters Protection Act, R.S.C. 1970, c.N-19. No definition of navigable waters is provided in the Act but the courts have called rivers that can be navigated by canoe or log boom navigable (Lucas & Franson 1971). No provisions for public hearings are included in the Act.

B.C. Hydro never applied to the federal government for permission to construct the Bennett Dam. However, Williston (1972) comments that when the project was first initiated by Peace River Power Development, his department, Lands and Forests, applied to the federal government to have the Peace River above the damsite declared navigable. The intention of this application was to make the Department of Transport responsible for installing and maintaining the navigation aids in the proposed reservoir thus relieving the provincial government of this financial burden. The federal government was aware of this motive, the Minister declares, and it refused to consider the river as navigable.

After British Columbia took over the Peace project from the private developers, the federal Minister of Justice, E. D. Fulton, threatened to invoke the Act to block or stall the project so that his pet project, the Columbia, could be started first (Sherman, Province Sept. 14, 1961). The provincial government then simply ignored Ottawa. Williston was later quoted as saying that there was no need for federal approval "for from the earliest days of Mackenzie and the fur traders, people had to portage around the
canyon area and never was there any navigable stretch in that part of the river" (Sun Jan. 7, 1971). Shrum (1972) said that B.C. Hydro's counsel, Senator Farris, told the company that if it approached Ottawa with any questions on the matter the federal government would likely declare that stretch of the river navigable and make them apply for a permit.

Ottawa was concerned as is illustrated by the following letter from H.A. Young, Deputy Minister of Public Works, to Dr. Shrum, Co-chairman of B.C. Hydro, dated October 24, 1962:

> While an application under the Navigable Waters Protection Act has been received from you in connection with the Columbia River Power Development, I can find no record of a request relative to the Peace River Power Development. Up to the present, I appreciate that much of the work was preliminary and planning. However, in the Sept. 1962 issue of the Engineering and Contract Record, I note in an article by Mr. James G. Ripley that definite plans are now underway.

> It is indicated that some $20 million has already been spent on preliminary work and plans for a contract for the main dam are underway for next spring. In these circumstances, it seems appropriate that I might write to you about the Navigable Waters Protection Act.

> Insofar as the Peace River is concerned it perhaps would seem that navigation will not be affected. On the other hand, we have received considerable comment on how this might affect, adversely, boat travel in the Athabasca, Great Slave and Mackenzie Rivers. For these reasons, we consider the Navigable Waters Protection Act should be taken into account.

The letter it appears was not answered and the federal government let the matter drop.
It is clear that the tension between the federal and provincial governments at that time frustrated a federal contribution to planning for the dam. This input might have resulted in some investigation of downstream impacts and possibly some of the problems that arose later may have been avoided.

The Fisheries Act

The Fisheries Act, R.S.C. 1970, c. F-14, which has such potential power over possible dams on the Fraser River was not applicable to the Peace River. The Act calls for the maintenance of an unobstructed passage for migrating fish. There was no fish migration on the Peace River; the Peace River Canyon, the damsite, was a natural barrier to upstream movement of fish. Some interest was expressed by the Department of Fisheries over possible pike introduction to the Fraser River. However, the Department only wanted assurance from the province that this problem would not occur (Correspondence, W.R. Hourston, Director Pacific Area, Department of Fisheries to A. Paget, May 31, 1962).

Interprovincial Cooperation

There are no specific legislative provisions at a provincial or national level requiring cooperation on interprovincial rivers but prudence would make cooperation advisable. Peace River Power Development contacted the Alberta government and agreed to maintain a flow of 6,000 cfs at the Alberta border (Correspondence,
F.J. Pine, Peace River Power Development, to A. Paget, Jan. 14, 1960). When that company was expropriated there was no further correspondence with Alberta until after the water licences were issued. (Appendix A outlines the correspondence between Alberta and British Columbia till April, 1969). The Water Comptroller ignored the previous agreement and allowed B.C. Hydro to release as little as 1,000 cfs during part of the period the dam was being filled, although downstream tributaries increase that flow by the time it reaches Alberta.

Initially B.C. Hydro wanted to raise the question of downstream flood and power benefits with Alberta but some questions arose about possible interference to MacKenzie River navigation from Northland Navigation, a federal Crown Corporation, so British Columbia decided not to contact Alberta and risk a dispute (Shrum, 1972). Williston (1972) adds that there was some verbal communication between the governments in which both parties felt the project was self-evidently beneficial for everyone, hence there was little need for close cooperation. B.C. Hydro did not investigate possible ecological and environmental downstream damage that would require interprovincial cooperation because, in Shrum's (1972) and Williston's (1972) view, no one raised it as a problem.

Legal Liability

A developer has certain obligations to society other than those imposed by federal and provincial statutes. These
obligations should make him sensitive to possible external impacts from proposed projects to avoid court action from those people whose interests may be damaged. The correspondence file after the water licences were issued in 1962 indicates that Alberta was concerned about possible damages at Peace River, Alberta from the proposed water release schedules during the reservoir filling. Yet the town of Peace River is suing B.C. Hydro for $84,624.93 for damages done to their water supply system. (Alberta Supreme Court 1971).

This court case now being heard in Alberta illustrates some legal responsibilities the developer should consider. Also, the circumstances influencing B.C. Hydro's actions indicate why the corporation failed to take its legal responsibilities seriously. B.C. Hydro is being sued for adversely affecting the town's water supply by having "wilfully, unlawfully and intentionally contravened the Navigable Waters Protection Act". But in addition to failing to satisfy this legislative provision the corporation is being sued for negligence and for depriving the town of its riparian rights. A fourth grounds for damage is nuisance, defined as a use of land that unreasonably interferes with other uses of land. This remedy is not appropriate with which to challenge B.C. Hydro for Section 52A of the British Columbia and Power Authority Act, S.B.C. 1964, c.7, prohibits actions brought against the corporation for nuisance (Lucas & Franson 1971).
Lucas and Franson outline some other general problems related to bringing B.C. Hydro to court for downstream damages.  

1. The plaintiff must be specifically injured. This stipulation would apply for the town of Peace River but the claim becomes a little more fuzzy if the natives of the Delta attempt court action. 

2. If the statutory permits and authorizations are clear in permitting damage there is no legal remedy for those so damaged. 

3. The interjurisdictional nature of the case complicates the question of whether the statutory authorization concept or Section 52A can constrain private legal action in Alberta. 

4. If the case is brought to court in Alberta that court could only ask for monetary compensation. The court could not claim supervisory functions outside its jurisdiction. This would satisfy the town of Peace River but if the Delta residents were to sue they might want remedial action so that they could resume their traditional pattern of life. 

5. The financial burden of bringing the case to court is too great for most groups, especially if there is a chance they will lose and then also have to pay court costs. 

Lucas and Franson warn that their discussion is general and this summary further simplifies the complex legal issues, but the point that emerges for the planning process is clear. The few legal constraints on the government developer are not sufficient to force it to be sensitive to the environmental and social impacts its projects may create.
Throughout the planning of the project there was considerable discussion and debate on its merits and failings by the opposition, interested groups and the public. But, with some exceptions, much of the debate was like MacBeth's view of life "full of sound and fury, signifying nothing". There was little information generated that could inform public opinion. The plans of Peace River Power Development, the Comptroller's evaluation of those plans, the 1961 Energy Board Report, their consultant's report, the 1962 Water Comptroller's hearing and the water licence correspondence were open to public scrutiny, if any of them could be located. But these reports are for the most part of marginal interest for they deal with detailed engineering and in some cases financial findings. This is not the stuff of informed debate to determine whether such a project reflects society's needs and aspirations. Innocuous sentences that hint at some more basic issue or possible internal government dispute kept debate fueled for weeks if not months. Paget's comments in his engineering review of the Peace River Power Development plans that Peace power could be marketed in British Columbia if no other major project came along to capture part of the market is an example. Without the resources to contribute substantive arguments the only feedback from the public that could be transmitted to the planners and decision-makers was various groups' opposition or approval of the project.
REFORMULATION

Without the feedback from the public and other levels of government the process of reformulating the objectives was, as has been indicated, an almost entirely internal matter.

DECISION-MAKING

From the preceding discussions it should be clear that the major decisions were made early on in the planning process. The subsequent planning was carried out largely to confirm that decision and make it a reality. Within their frames of reference those people performing the technical functions might at times question aspects of the decision or even threaten it (e.g., the initial conclusion about the non-competitiveness of Peace power by the Energy Board's consultants). However their investigations were conceived so narrowly and the structure of the planning process was so limited no attractive alternative was likely to emerge to threaten the original decision.

CONCLUSIONS

Public Participation and Representation

There was virtually no scope for public involvement even at a public hearings level. There is a danger in using today's values of public participation to evaluate a project that happened ten or more years ago. However, the ideal of public representation
has been in vogue for a long time and by this standard the planning process does not fare too well. Within the government only a small number of agencies were involved and these represented a small cross-segment of opinion in society. B.C. Hydro reflects the energy interest in the province. This interest touches everyone but not deeply in terms of portion of income spent for electricity. The technicians and decision-makers reflect a strong engineering concern. The Water Resources Service and the Comptroller are concerned with protection and regulation of water licencees and new applicants. But within the department research and regulation into major hydro-electric concerns is a significant feature. A close connection exists between these concerns and B.C. Hydro. The staff is again engineering-oriented. The B.C. Energy Board's responsibilities, to seek out and assess new energy sources to meet future demands, closely ally it with the previous two agencies who must also be considered its clientele along with the Cabinet. The consultants they have hired have almost always been engineers or engineering cost accountants although for their most recent studies ecologists and biologists have been consulted. The Department of Recreation and Conservation - Fish and Wildlife Branch can only advise in water resource issues and has no real power except through persuasion and the power of prestige. Until recently its clientele group has been the sport fishermen and hunters. Attempts are being made to broaden this clientele. Biologists characterize their staff.
Information Generation

The government organization structure is set up so that only a small group of technical people contribute to the planning decisions and these people are for the most part engineering-oriented. Within this structure the information generated is highly technical and unlikely to enliven debate or offer alternatives. This is what happened on the Peace project. Unless the structure of government and public interaction is significantly altered, future planning will continue to generate information of little value to the public.

Alberta and the federal government must suffer some criticism for their negligence in not protecting their own interests (Alberta) and not maintaining the wider national perspective (federal government). These governments had an opportunity to broaden the interests represented and produce information relevant to the planning and decision-making debate before final approval of the project. There are genuine political and legal reasons why their role was so minimal but their presence does not offer a potential for opening up future planning.

Efficiency

Without alternatives to compare it was difficult to determine at the time whether the Peace was the most efficient solution to meet the goals. There was argument to suggest that it was not the most economical solution to satisfy the power objectives but there
were little resources available to substantiate these assertions.

With hindsight we can see that, at least in terms of cost of power generation, the Bennett Dam was remarkably successful. With eight generators installed power is being generated at the forecast 8 mils. When the two peaking generators are installed, power will be delivered at the 4.4 mils price estimated 11 years ago (Williston 1972). Part of this success is bound up with the development of the north which this project helped stimulate. Development increased load growth rates so the potential of the river was utilized earlier reducing interests costs and hence offsetting rising construction costs. Cost for Columbia power will be, on the other hand, many times more expensive than earlier estimated.

The financial success of the Peace project speaks well of the agencies responsible for its completion, however, such success may in part have been achieved through a failure to account for the economic welfare aspects of the project. This is, in effect, a failure of the organizational structure to provide a government department responsible for environmental quality. The interprovincial aspect of damage to the Peace-Athabasca Delta complicates the efficiency criteria in terms of organizational structure derived in Chapter Two. No British Columbia department can be responsible for defending environmental values in Alberta. But there is no department that is responsible for identifying and weighing possible environmental externalities and spillover effects from large-scale projects that
occur in British Columbia. Without an organization prepared to
provide this public good, or rather service, the planning and decision-
making process is ill-prepared to make a comprehensive evaluation of
the total benefits and costs to society from such large-scale power
projects like the Peace.

Equality

Everyone has an equal chance to participate in government
decision-making by writing or appearing before public hearings if
they are entitled. Nevertheless the public participation and repre-
sentation criteria indicates the government structure frustrates
a broad range of interests in decision-making. Evaluation of the
Peace project in terms of the equality criteria shows that corporate
interests dominate the public review of the dam's construction and
operation. The petroleum interests, in this case, had interests
to protect and the legal and financial resources to defend them.
The impact of private corporations on the more basic decisions as
opposed to the impact of other groups in society is harder to dis-
cern. We can only say that they had a disproportionate opportunity
to make their views known because of their special interests in the
decisions and their resources. The new Environmental Land Use Act
will provide more opportunity for the public to be heard in future
power decisions and an awakening of interest in environmental values
will ensure that these values are presented. But without the resources
of the economic groups to back their concerns it is unlikely these
interests will achieve a hearing in government proportionate to the corporate groups.

Professional Humility

In the Peace project there may well have been professional arrogance towards those people to be affected by the project. However, the responsibility for the ecological and social damages in the Peace-Athabasca Delta would appear to rest with public and professional attitudes at the time that were not cognizant of environmental externalities from such projects and an organization structure that promoted engineering planning views above all others.

Natural Justice

The public hearings provision of the new Environmental Land Use Act should correct the failing of the planning for the Peace project that did not allow the public's views to be formally presented to the government.

Liberty

There is no indication that the free association of individuals that opposed or approved of the project was denied.

Political Leadership

Although there was considerable debate over the Peace project, many of its opponents were more interested in discrediting the government than the dam. Without strong interest group concern for the Peace project itself, there was not much of a basis for any new strong political leaders to emerge.
CHAPTER FIVE

RECOMMENDATIONS

INTRODUCTION

From the previous discussions two basic approaches are offered in deriving the following general recommendations to improve planning and decision-making for large-scale power projects in accord with the proposed criteria. To broaden the developer's planning for power projects an extension of private and civil legal remedies open to the public is offered. This approach is designed to force the developer to consider very basic questions of the planning process, i.e., whether the project is in fact necessary and whether the proposed project is the only justifiable alternative. But as large-scale projects are invariably closely connected with government policy a political approach is needed to ensure that environmental interests are able to influence government decisions. To accomplish this task an environmental review agency that can solicit public views and challenge the feasibility of the project is suggested. Also interest group representation and federal government participation is stressed to ensure that in the final outcome of the planning process those groups who are concerned will have their views taken into account. The two approaches are not necessarily complementary and the functions they serve may overlap but the reliance on one approach may not ensure that the criteria are observed.
RECOMMENDATION

Create an Environmental Review Agency

Hydro and engineering interests predominate in the planning and decision-making for large-scale power projects. These interests do not necessarily reflect the social preferences that exist in British Columbia for there is little opportunity for other interests to participate in the crucial planning stage. Planning is conducted by a closed group of engineering concerns that consider only those outside interests that are defined in the Water Act.

Also the information generated in the planning stage of these projects has been inadequate. It has not been able to inform the various interests in the province of the broad economic and environmental costs and benefits of these projects. This situation has further decreased the opportunity of outside interests to effectively present their views to the planners and politicians. Consequently the planning that precedes these projects may not adequately isolate social goals and the compromise alternatives that reflect the public interest.

To compensate for the ineffective public participation and inadequate information generation in planning for large-scale power projects this thesis recommends that an environmental review agency be created,

The agency should be consciously designed to attract the
views of significant interests in society regarding the environmental case for major resource decisions. Also it should have the resources to generate information that can inform these and other interests in society.

The agency would be in effect a countervailing force to the predominant hydro and engineering interests, or more generally, the resource development interests in the province. The agency would have the independence to pursue matters of its own choosing rather than carry out studies ordered by the government. Thus when the proposals are put forward for a major power project, the agency could prepare a report on the proposal in which it could recommend against acceptance, suggest modifications or even offer alternatives to the project.

Hopefully the review agency's recommendations, based on comprehensive analysis of the complex nature of social and ecological systems, would produce arguments that would induce strong support among environmental interests within society. These groups would in turn exert pressure on the cabinet, the final decision-maker, to uphold the recommendations.

The organization of the review agency should be designed to offset many of the problems beset by government institutions. One major problem, especially for institutions involved in the planning process, is how to ensure that administrative bodies do not usurp the political functions of decision-making. The number
of and complexity of major energy and resources issues often allows the administrators or planners to shape the decision-space for the politician, in effect making the decisions for the elected leader. The creation of an advocate environmental review agency can help expose this internal decision-making by attacking the assumptions made by those other government agencies and departments that are planning the projects. The public interplay between the different agencies should expose the relevant issues for the elected officials to decide. The review agency must thus be assured of a free-lance role in the total government structure so that it is free to criticize other government departments' proposals even though those proposals might be part of government policy.

The review agency should be as free as possible from direct political control. It could be given a constitution much like a crown corporation where the agency would be left to run its own affairs until such time as the government feels it must intervene to force a change or disband the agency. The fact that the agency would not have any direct power other than its own integrity makes continuous accountability to the cabinet less important. The agency would, of course, be obliged to give some account of its activities and expenditures and remain open for public scrutiny.

A second related problem concerns the internal integrity of the agency. The internal structure must reflect the environmental concerns the agency defends and the independent role it must maintain.
The staffing of the agency should be from professions that identify with environmental concerns so that the agency can pursue its advocacy role with vigour. Also there should be a permanent technical and administrative staff as a basis for the investigations it would conduct.

The agency would also need to have a secure source of funding so that it would remain independent of direct government control. To achieve some financial independence, the budget could be worked out on a long-term basis, perhaps two to four years.

A third problem is the need to ensure that the review agency is able to reflect the environmental interests held within society. To overcome this problem the agency's governing body should be selected from a number of different groups within society - labour, industry, wildlife groups, etc. A slightly more difficult task will be to ensure that the unorganized interests in society will also be reflected. Judicious selection of the members of the governing board, instructions to the permanent staff to seek out unrepresented views and the use of public hearings could help incorporate these unorganized interests into the planning process although achievement of this objective is unlikely to ever be completely satisfactory.

The political feasibility of the recommendation for a review agency rests with the willingness of the government in British Columbia, that is generally unencumbered by administrative constraints, to share
its power in this politically sensitive field. Chapter Three illustrated the essential materialism in the province with the subsequent toleration of resource extraction for economic growth. Hence, unless environmental awareness becomes more acute, the cabinet might ignore the review agency's findings with distressing frequency. But it would be an explicitly political act counter to the public advice of the government's own environmental experts. The government would have made a conscious value trade-off between environmental quality and economic growth.

If the review agency does not produce environmentally satisfactory results immediately, the creation of an environmental review agency should at least 1. aid in the generation of comprehensive information from an environmental perspective, 2. introduce new public hearings into the planning process, and 3. give environmental representatives a more significant role in planning for large scale power projects.

**RECOMMENDATION**

Mobilize political support for government agencies concerned with energy decisions.

To reinforce the planning process in accord with the proposed criteria other political reforms can be adopted. To facilitate the efficiency and equality criteria government departments could be reorganized so that they reflect specific interests in society. Environmental quality, for example, is becoming an issue
upon which many governments are organizing new departments. Traditional departments such as the natural resource and conservation departments only tangentially reflect this concern and thus new departments representing these interests are being proposed. British Columbia might follow Alberta's lead in this regard by establishing a Department of the Environment with jurisdiction over environmental quality. The review agency might have the same relationship as Alberta's Environment Conservation Authority has with the Department of the Environment. The Department carries out administrative tasks of regulation, standard setting etc., while the Authority has a freer hand to investigate and make recommendations on specific issues and problems. The point of the reorganization would be to give public access to government departments that represent their interests.

The temptation to consolidate all existing agencies that have jurisdiction over some aspect of particular fields like the environment must be avoided. The internalization of natural conflicts between, for example, a resource development agency and a conservation agency permits trade-offs to be conducted by technicians. Holden (1966) points out a problem that must be taken into account for those agencies that have regulatory functions. There is a tendency for the agencies to adopt the perspective of those groups they are attempting to regulate.

The cultivation of a constituency by organizations to sustain
their legitimacy is universal. What this recommendation envisages is that a department's constituency is also equivalent to the public goods or services that it is most suited to provide. Thus natural resource or conservation agencies would be inappropriate units of government to ensure that the environmental quality interests are represented in the planning and political process. There would be conflicts of interest between the types of services they would have to perform. A new organization would have to be created. The old agencies would only lose those responsibilities for which they are ill-equipped to perform.

This organizational efficiency could be enhanced by attempting to strengthen the ties between government departments and the interests they serve. The various departments could make available personnel to articulate and represent the less organized and more diffuse group interests. This proposal would require a conscious desire on behalf of government to counterbalance the more well organized voices and overcome the external and decision-making costs that frustrate the organization and representation of certain kinds of interests in government decisions.

RECOMMENDATION

Include in the B.C. Water Act, fish, wildlife and recreation rights to water.

The Water Comptroller hearings stipulated under the Water Act
are restricted to only those objectors with rights to water in terms of licenses. But more important, legal appeal to the Water Comptroller's decisions is restricted to these same licensees. The straight-forward system of licensing in terms of date of issue and priority use of water has been a remarkably effective administrative practice; there have been virtually no legal appeals to the Comptroller's decisions (Raudsepp 1967).

If the rights to water are extended to include fish, wildlife and recreation rights, the Water Comptroller's internalization of conflicts will not be so easy to accomplish. Fish, wildlife and recreation interests are more nebulous to define than the traditional interests, hence, there could not be any specific license holders. Nevertheless groups with interests in these fields could be entitled to appear at the hearings as well as appeal the Comptroller's decisions.

Although the greater scope for legal appeal to the Comptroller's decisions might frustrate the smooth operation of administrative procedures the wider representation of interests would achieve more satisfactory planning solutions. The goal identification and alternative evaluation steps of the planning process that are necessary to inform the public would have to be made explicit. Once in the courts, legislation might be so defined that wildlife interests, for example, would have to contend that wildlife would be unnecessarily affected. If we assume that hydro interests
are legitimate users of water the onus would be on these interests to prove either that there would be no significant destruction of wildlife or the project was so necessary that wildlife damage would be unavoidable, i.e., that the project proposed is the most satisfactory alternative. The wildlife interests could then challenge the developers' justification for the project. It is hoped this legal constraint would force the developer to make explicit the project's aims and alternatives whether he is challenged in court or not.

To permit non-licensed interests to object and appeal would require a change in traditional practice; a much broader standing to sue would have to be allowed. At present, if the public interest is damaged only the Attorney-General has the right to take legal action. Needless to say he is unlikely to challenge a project that is part of government policy. This recommendation would require extensive investigation to determine its feasibility but it does offer potential for 1, broadening the range of interests that can affect planning and decision-making, and 2, producing basic information and argument that is useful to public debate over planning priorities and alternatives.

However, as we have seen, the theoretical problems of interest group organization, the practical problems associated with a weakly defined interest group structure in British Columbia and the problems of financial and professional resources to argue
such cases would lessen the impact of this recommendation. Also such an approach fails to grapple with the basic conflict in values between environmental quality and natural resource-based economic growth. The developer would most likely still have the advantage for with his resources, expertise and connection with government policy, he could set the parameters for the case.

**RECOMMENDATION**

Encourage the federal government to assert their powers where projects affect the national interest.

Major projects are not solely a provincial concern for they affect large areas that may be of national importance. Where the national interest is affected the government has the duty to report to the nation the impact the project may have on national values. If the federal government has the jurisdiction it should work to protect those values in the planning for the projects. A more vigorous federal involvement might strain federal-provincial relations even more than now is the case. However, this involvement should enhance the planning process by increasing the information needed to inform public debate and widen the opportunities for representation in planning.
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APPENDIX A

Province of British Columbia
WATER RESOURCES SERVICE WATER RIGHTS BRANCH
Department of Lands, Forests and Water Resources

CONDITIONAL WATER LICENCE NO. 27721

British Columbia Hydro and Power Authority of Vancouver, B.C., is hereby authorized to divert and use water as follows:-

(a) The Sources of the water supply are the Peace River and its tributaries.

(b) The point of diversion is to be located approximately as shown on the attached plan.

(c) The date from which this licence shall have precedence is 14th February, 1962.

(d) The purpose for which the water is to be used is Power.

(e) The maximum quantity of water which may be diverted is 58,300 cubic feet per second.

(f) The period of the year during which the water may be used is the whole year.

(g) This licence is appurtenant to the undertaking of the licensee.

(h) The works authorized to be constructed are a dam, penstocks, power house, spillway, low level outlets and switch yard which shall be located approximately as shown on the attached plan, and substations and transmission lines on a route or routes to be selected by the licensee to convey electrical energy so developed to places of use.

(i) The construction of the said works shall be commenced on or before the 31st day of December, 1963 and shall be completed and the water beneficially used on or before the 31st day of December, 1978.
(j) The licensee shall not commence construction of any part of the works authorized under clause (h) hereof until the plans for such part have been approved by the Comptroller of Water Rights.

(k) The licensee's rights issued under this licence shall be deemed to be subsequent to any rights granted under any licence or licences which may be issued at any time for the consumptive use of water.

A.F. Paget,
Comptroller of Water Rights.

FILE NO. 0242651 Date Issued: December 21, 1962 LICENCE NO. 27721.
CONDITIONAL WATER LICENCE No. 27722

British Columbia Hydro and Power Authority of Vancouver, B.C., is hereby authorized to store water as follows:

(a) The sources of the water supply are the Peace River and its tributaries.

(b) The storage works are to be located approximately as shown on the attached plan, Exhibit "A".

(c) The reservoir comprises those portions of the Peace River and its tributaries and the areas adjacent thereto as may be flooded by the works authorized under this licence.

(d) The date from which this licence shall have precedence is 14th February, 1962.

(e) The purpose for which the water is to be used is as set out in Conditional Water Licence No. 27721.

(f) The maximum quantity of water which may be stored is 32,000,000 acre feet per annum.

(g) The period of the year during which the water may be stored is the whole year, subject to clause (q) hereof.

(h) This licence is appurtenant to the undertaking of the licensee.

(i) The works authorized to be constructed are a dam and auxiliary works, which will store water to a pool elevation not to exceed 2,200 feet.

(j) The construction of the said works shall be commenced on or before the 31st day of December, 1963 and shall be completed and the water beneficially used on or before the 31st day of December, 1978.

(k) The licensee shall not commence construction of any part of the works authorized under clause (i) hereof until the plans for such part have been approved by the Comptroller of Water Rights.

(l) The licensee shall clear the reservoir in the manner and to the extent as directed by the Comptroller after consultation with the Deputy Minister of Forests.

(m) The licensee shall provide public access to the reservoir area as may be directed by the Comptroller.
(n) The licensee shall make available an amount not to exceed $10,000 (ten thousand dollars) to the Department of Recreation and Conservation in the year 1963 to conduct a study and make a report on such remedial measures as may be determined to be necessary for the protection of fisheries and wildlife.

(o) The licensee shall undertake and complete such remedial measures for the protection of fisheries and wildlife as the Comptroller may direct following receipt of the aforesaid report from the Department of Recreation and Conservation.

(p) The licensee shall construct and operate such components of a hydrometeorological network as may be directed by the Comptroller of Water Rights and shall make the information available to the Comptroller as he directs.

(q) The licensee shall unless otherwise directed by the Comptroller make such minimum releases from the reservoir as are shown in the attached Exhibit "B", and in addition shall make such further releases as may be directed by the Comptroller from time to time in the public interest.

(r) The licensee's rights issued under this licence shall be deemed to be subsequent to any rights granted under any licence or licences which may be issued at any time for the consumptive use of water.

A. F. Paget,
Comptroller of Water Rights.

FILE No. 0242651  Date issued: December 21, 1962  LICENCE NO. 27722.
EXHIBIT "B"

Minimum flows to be maintained by releases of water from the reservoir pursuant to Clause q of Conditional Water Licence No. 27722.

December 1 to March 31 .... Calculated natural inflows to the authorized reservoir.

April 1 to July 15 ....... 10,000 cubic feet per second or the natural flow whichever is the lesser, as measured on the Department of Northern Affairs and National Resources' gauge located near Taylor, B.C.

July 16 to September 15 .... 10,000 cubic feet per second, as measured on the Department of Northern Affairs and National Resources' gauge located near Hudson Hope, B.C.

September 16 to November 30.. 10,000 cubic feet per second or the natural flow, whichever is the lesser, as measured on the Department of Northern Affairs and National Resources' gauge located near Taylor, B.C.

Provided also that a flow of not less than 1000 cubic feet per second shall be released from the dam at all times.

DATED at Victoria, B.C., this 21st day of December, 1962.

A.F. Paget
Comptroller of Water Rights

FILE No. 0242651
AMENDMENTS to Conditional Water Licence No. 27722

Being satisfied that no person's rights will be affected, I hereby amend clause (n) of Conditional Water Licence No. 27722, Peace River and its tributaries, to read:

(n) The licensee shall make available an amount not to exceed $10,000 (ten thousand dollars) to the Department of Recreation and Conservation during the period ending 31st March, 1964, to conduct a study and make a report on such remedial measures as may be determined to be necessary for the protection of fisheries and wildlife.


A.F. Paget,
Comptroller of Water Rights.
In accordance with Clause (q) of Conditional Water Licence 27722, being satisfied that it is in the public interest and that the rights of downstream users will be adequately protected by the licensee, I hereby direct that, during the period commencing on the 16th of July 1968 and ending on the 30th of September 1968, the licensee shall maintain a minimum release of 1,000 cfs from the dam, or such higher release as may be required to maintain adequate water levels at Taylor, B.C. in accordance with the requirements of the holders of prior licences on the Peace River.

The requirements of Exhibit "B" shall not apply during the above-mentioned period.

15th day of July, 1968.

H.D. DeBeck,
Comptroller of Water Rights.
In accordance with Clause (q) of Conditional Water Licence 27722, being satisfied that it is in the public interest and that the rights of downstream users will be adequately protected by the licensee, I hereby direct that, during the period commencing on the 1st of December 1968 and ending on the 31st March 1969, the licensee shall maintain a minimum flow of water measured at the Water Survey of Canada gauge at Taylor, British Columbia of 10,000 c.f.s. or the natural flow at that point, whichever is the lesser.

The requirements of Exhibit "B" shall not apply during the above-mentioned period.

15th day of November 1968.

H.D. DeBeck,
Comptroller of Water Rights
Being satisfied that no person's rights will be injuriously affected I hereby amend Clause (i) of Conditional Water Licence 27722, Peace River and its tributaries, to read as follows:

(i) The works authorized to be constructed are a dam and auxiliary works, which will store water to a pool elevation not to exceed 2,205 feet.

30 day of March, 1972

H.D. DeBeck,
Comptroller of Water Rights.
APPENDIX B

The following correspondence between the Alberta and British Columbia governments concerning the W.A.C. Bennett Dam reveals the lack of communication between the two governments during construction of the dam. The list of correspondence was compiled by R. Reirson, then acting Minister of Agriculture in Alberta and sent to Ray Williston, Minister of Lands, Forests and Water Resources in British Columbia, on March 11, 1970. The water licenses which permitted construction of the dam were issued in December 1962. All formal communication between the two governments was after that date.


Perrault asks about a statement made by Mr. Hunter, General Manager of Northern Transportation, who stated that the Peace project might seriously lower the level of Lake Athabasca and the Slave Lakes.


Grindley replied that the Peace project would have a beneficial effect for it would absorb the flood peaks and provide an even flow of 40,000 cfs downstream which might make a power site in Alberta feasible. He did not want to comment on possible lower
lake levels for it was a federal matter and they were studying that possibility.


Strom expresses concern about the recent issue of the water license for the Peace project and refers to a meeting held with members of Peace River Power Development on July 9, 1959. He writes, "I feel certain that the Town of Peace River will be in trouble with their intake if a flow of 1,000 cfs is reached. We all agreed on a minimum flow of 6,000 cfs throughout the year. I am also certain our ferry crossing in Alberta will be in difficulty if low flows were less than 6,000 cfs. Sewage dilution below Peace River town is also important".

January 11, 1963. Harry Strom, Minister of Agriculture, Alberta, to R. Williston, Minister of Lands and Forests, B.C.

Strom refers to the 1,000 cfs permitted in the water license and comments that Peace River Power Development had agreed to a minimum flow of 6,000 cfs, an agreement Alberta would like to see upheld.


Williston replies that "providing for a flow of 1,000 cfs as a minimum release from the dam at all times is to correct a problem peculiar to B.C. alone and necessary to maintain some water flow
at the Village of Hudson Hope. This situation more than likely would be necessary between the period of April 1 to September 15 when flows from tributaries downstream from Hudson Hope would be high but there would be little or no inflow in the short stretch between the dam and the village". He concluded that "it would seem a flow of 10,000 cfs would be maintained at Peace River, Alberta".

March 26, 1963. R. Williston to Harry Strom.

Williston refers to a letter dated March 18, 1963, and comments "with respect to your remarks concerning promises by the Peace River Power Development Co., it is first recorded that this government was not associated with these presentations and does not feel bound by pronouncement of its officials. However, it could be noted that only once in the period of record has the flow at Peace River, Alberta been as low as 6,350 cfs which was during March 1919. Extremely low flows are likely the consequence of ice jams acting as temporary dams and would not be corrected by increased flows".

April 22, 1963. Harry Strom to R. Williston

Strom says he is not worried about midwinter flows but about fall discharges. He writes that "according to a study several periods in the past when the inflow between the dam site and Peace River Town was so low that holding back all but 10,000 cfs (sic-1,000?) at Hudson Hope or at Taylor as per "Exhibit B" (of the water license) would have presented the town with serious difficulties".

Williston writes that he is aware that there might be a problem in the fall but he expects the dam to be in operation by then so there will not be a problem in 1968. He also comments that "it appears that the dam could theoretically be operated in such a manner as to produce low water at the town's intake, but there is no reason why this should occur in the normal operation of the dam. It is the concern of the government and B.C. Hydro that this does not occur".

November 12, 1963. J.L. Reid, Secretary, Alberta Power Commission, Alberta to A. Paget, Water Comptroller, B.C.

Reid asks for information on the diversion and filling schedule for the dam so that he might know how it might affect Peace River, Alberta.

November 19, 1963. A. Paget to J.L. Reid.

Paget gives information on the dam and comments that he does not see any problem for downstream users because there should be enough storage for the dam's operation before the fall of 1968.

May 7, 1964. J.P. Ottersen, Project Manager, B.C. Hydro to J.L. Reid.

Welcomes Alberta Power Commission for a tour of the Peace project on May 12.


Reid apologizes for the cancelled trip to the Peace.

DeBeck comments that amendments to the water license will have little effect downstream.

April 11, 1969. J.L. Reid to H.K. Pratt, B.C. Hydro.

Reid refers to a letter dated April 9, 1969, that outlines the quarterly flow estimates and comments that Alberta has nothing to be concerned about.


Agrees to send to Alberta weekly flow estimates.